APPENDIX B

REMEDIAL ALTERNATIVE COST ESTIMATES

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ATTACHMENTS

TABLES

ACRONYMS/ABBREVIATIONS

bcy	bank cubic yards
CLEAN	Comprehensive Long-Term Environmental Action Navy
CTO	contract task order
CWMI	Chemical Waste Management, Inc.
FS	Feasibility Study
IR	Installation Restoration (Program)
lcy	loose cubic yards
NAF	Naval Air Facility
O&M	operation and maintenance
PCB	polychlorinated biphenyl
QC	quality control
RACER	Remedial Action Cost Engineering and Requirements
RCRA	Resource Conservation and Recovery Act
RI	remedial investigation
SVOC	semivolatile organic compound
TAL	target analyte list
TDS	total dissolved solids
U.S. EPA	United States Environmental Protection Agency
VOC	volatile organic compound

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Section B1
INTRODUCTION

This appendix discusses the order-of-magnitude cost estimates developed for each remedial alternative evaluated in this Feasibility Study (FS) Report for Installation Restoration (IR) Program Site 2, Patrol Road Landfill, at Naval Air Facility (NAF) El Centro. The cost estimates presented in this appendix were developed in compliance with the National Oil and Hazardous Substance Pollution Contingency Plan and with United States Environmental Protection Agency (U.S. EPA) technical guidance (U.S. EPA 1987, 2000) using the Remedial Action Cost Engineering and Requirements (RACER) 2005 System, Version 7.0 (Earth Tech 2005). The estimating methodology, assumptions, cost analysis, and net present value for each alternative are presented in the sections that follow.

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Section B2
SUMMARY OF COSTS

Four alternatives for IR Site 2 were subjected to a detailed analysis in this FS Report. These alternatives are as follows:

- Alternative 1 – no action
- Alternative 2 – excavation with concrete debris recycling and off-site disposal of remaining debris and waste
- Alternative 3 – landfill presumptive remedy with concrete debris recycling, hot spot removal, and off-site disposal of surface debris, compatible with potential new runway
- Alternative 4 – landfill presumptive remedy with concrete debris recycling, hot spot removal, and off-site disposal of surface debris, compatible with existing runway

Alternative 1 has no associated costs and is therefore not discussed in this appendix. The costs of Alternatives 2, 3, and 4 are affected by the potential that a new runway would be constructed, as it would extend into IR Site 2. Alternative 2 assumes that a potential new runway would be constructed at NAF El Centro, with contingencies for no new runway. Alternative 3 assumes that a potential new runway would be constructed. Alternative 4 is similar to Alternative 3, except that it assumes that the existing runway would remain in use and no new runway would be constructed.

A detailed description of each alternative is presented in Section 4 in the main FS Report.

A summary of the net present value cost associated with these alternatives is provided in Table B2-1.

Table B2-1
Summary of Net Present Value Cost for IR Site 2 Remedial Action Alternatives

Remedial Action Alternative	Net Present Value (2005 dollars)
1	No Costs
2	$14,422,000
3	$8,496,000*
4	$6,193,000

Note:
* net present value of the runway construction work portion is $1,458,000; refer to Table B5-2 for details

Acronym/Abbreviation:
IR – Installation Restoration (Program)

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Section B3
METHODOLOGY

The RACER 2005 (Earth Tech 2005) cost system, originally developed for the U.S. EPA and U.S. Air Force, was the cost-estimating technique used for this FS Report. A description of the RACER cost system is provided below.

B3.1 DESCRIPTION OF RACER

RACER cost models are based on generic engineering solutions for environmental projects, technologies, and processes. The generic engineering solutions were derived from historical project information, government laboratories, construction management agencies, vendors, contractors, and engineering analyses. When an estimate is developed in RACER, generic engineering solutions of the system are tailored to reflect the project-specific conditions. The tailored plan is then translated into specific work items, priced using the current cost data. The RACER assembly cost database was developed from the U.S. Army Corps of Engineers Unit Price Book and supplemented by vendor and contractor quotes. RACER 2005 incorporates and summarizes cost by the code of accounts that was developed by the interagency Cost Estimating Group for Hazardous, Toxic, and Radiological Waste Remediation.

RACER 2005 costs are location-specific, using factors to modify costs in the database for the site-specific geographic location. Included with the direct cost is an estimate for professional labor support to the remedial action. This support is calculated based on the technology employed and includes construction oversight and preparation of work plans (e.g., safety and health, sampling, quality control). Indirect cost estimates for the remedial action include items such as sales tax, contractor's overhead, contractor's profit, bonds, and insurance costs.

The cost estimates presented in this FS Report have an accuracy of -30 percent to +50 percent, consistent with U.S. EPA remedial investigation (RI)/FS technical guidance (U.S. EPA 1988). Cost estimates prepared at this stage of a remediation project can increase in magnitude during the design and/or implementation phase as a result of unforeseen conditions or items not reflected in the conceptual plans. Contingency allowances have been added to the total capital and operation and maintenance (O&M) costs at a rate of 20 percent to cover cost increases that may occur as a result of these unforeseen conditions or changes.

B3.2 COST ESTIMATE COMPONENTS

Cost estimates for the remedial action alternatives include capital costs, which consist of direct and indirect costs, and O&M costs.

Direct costs include detailed design/engineering (remedial design), construction, construction materials, direct labor, equipment, land and site development, and remedial action professional labor. Indirect costs include contractor general conditions; prime and subcontractor overhead; profit, taxes, bonds, and insurance; prime contractor home office costs; and overhead associated with professional labor. O&M costs include operating labor, postclosure maintenance, auxiliary materials, energy costs, administration,

purchased services, environmental monitoring, testing and analysis, and postclosure site inspections.

B3.3 NET PRESENT VALUE

Present value analysis is a method of evaluating expenditures that occur over time. The costs for different remedial action alternatives can be compared on the basis of a single figure for each alternative by discounting all future costs to a common base year. This single figure—the present value—represents the amount of money, which, if invested in the initial year of the remedial action and disbursed as needed, would be sufficient to cover all costs associated with that action.

Remedial action is not expected to commence until 2008. This would be concurrent with construction of a potential new runway at NAF El Centro as assumed for Alternatives 2 and 3. For consistency, the same date is assumed for Alternative 4. However, in accordance with currently accepted practice for costing remedial alternatives, the net present value calculations for each alternative were not escalated to account for potential impacts from inflation that might occur between January 2005 (RACER cost baseline) and the estimated start of remedial action in 2008.

The present value of expenditures occurring over the life of a remedial action is determined using the following equation:

$$PV = \sum_{t=1}^{t=n} \frac{x_t}{\left(1+i\right)^t}$$

where

PV = present value
x_t = expenditures for the remedial action in year t (escalation rate = 0 percent)
i = net annual discount rate (2.10 percent discount rate [U.S. EPA 1993] minus 0 percent escalation rate equals net 2.10 percent discount rate)
t = year in which expenditure occurs following construction
n = number of years following the start of construction (assumed January 2008) through the completion of the postclosure monitoring and maintenance period

The net present value of each alternative was calculated by adding the capital costs to the net present value of the O&M annual expenditures priced as of January 2005 (including indirect costs and contingencies).

The following assumptions were made for calculating present value:

- inflation or escalation rate – no escalation applied for the duration of O&M annual expenditures
- discount rate – 2.10 percent
- escalation rate – 0 percent

- net discount rate – 2.10 percent
- period of performance – 30 years following construction

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Section B4
ASSUMPTIONS

Assumptions necessary to develop costs for the remedial alternatives using RACER 2005 were made on the basis of general engineering practices. General and specific assumptions used in preparing the estimated costs for the remedial alternatives in this FS Report are described below. Detailed descriptions of the alternatives, which are the basis for the cost assumptions, are presented in Section 4 in the main report.

B4.1 GENERAL ASSUMPTIONS

The following general assumptions were used in developing the cost estimates.

- The site is generally accessible. Specialized equipment, outside of that anticipated, would not be required to complete the work.
- Destruction of existing monitoring wells is assumed to include nine wells approximately 25 feet deep and two wells approximately 50 feet deep.
- The concrete recycling unit cost is estimated at $10 per ton. This estimate was provided by the contractor performing recycling of concrete from aircraft parking aprons along the south side of the airfield at NAF El Centro during summer 2004.
- Clean soil fill material used for backfill purposes can be obtained elsewhere at NAF El Centro. For Alternatives 2 and 3, it is assumed that fill could be obtained from excavation activities for a potential new runway outside the boundaries (east) of IR Site 2. For Alternative 4, which presumes no new runway, it is assumed that the fill would be obtained from existing or future stockpiles of excess soil generated from other on-base construction projects.
- All earthwork operations and postclosure maintenance activities would be conducted using safety Level D protective clothing.
- Contingency allowances are 20 percent of the discounted total capital and O&M costs (direct and indirect capital costs, long-term monitoring, and annual O&M) as applicable to each alternative.
- Installation of capital equipment would be implemented in 2008, and capital cost expenditure would be committed in January 2008.
- Unit 1 and Unit 2 debris/waste volumes are all assumed to be in units of bank cubic yards (bcy), which represents the in-place (undisturbed or compacted volume) volume. Areas to be backfilled are presented in two units of measurement: bcy and loose cubic yards (lcy), which represents the volume of material before it would be compacted in place (a 15 percent volume reduction is assumed as a result of compaction).

B4.2 ALTERNATIVE 2 SPECIFIC ASSUMPTIONS

The following specific assumptions were made when developing the cost estimate for Alternative 2.

- A potential new runway would be constructed. Contingencies for no new runway are discussed in the Alternative detailed description in Section 4 of the main FS Report.
- The costs and volumes for excavating materials disposed below grade were combined regardless of location or type of material. An estimated 38,700 bcy of Unit 1 construction debris from 1 to 7 feet deep would be excavated from an area of about 9.4 acres in the former borrow pits, and an estimated 46,100 bcy of Unit 2 landfill waste from 5 to 15 feet deep would be excavated from an area of about 4.7 acres in the landfill ravine.
- An estimated 49,800 bcy of Unit 2 surface debris covering an area of approximately 17.6 acres would be consolidated into three fractions (based on sampling results from the RI) in preparation for off-site disposal: 1) potential Resource Conservation and Recovery Act (RCRA) hazardous waste, 2) potential California hazardous waste, and 3) potentially nonhazardous waste (identified as not containing hazardous waste, but may contain designated waste or inert waste, as well, when profiled). The estimated 4,000 bcy of potential RCRA hazardous waste represents about 8 percent of the total volume (2 of 25 RI samples) and the 10,000 bcy of potential California hazardous waste represents about 20 percent of the total volume (5 of 25 RI samples that were hazardous by California standards but not by RCRA standards). The potentially nonhazardous and inert waste is the remaining 35,800 bcy.
- Soil confirmation sampling (including sample collection, analyses, and data validation) of the Unit 1 and Unit 2 areas would include analyses of 108 samples for target analyte list (TAL) metals using U.S. EPA Method 6020, analyses of 72 samples for semivolatile organic compounds (SVOCs) using U.S. EPA Method 8270C and pesticides/polychlorinated biphenyls (PCBs) using U.S. EPA Methods 8081A and 8082, and analyses of 36 samples for dioxins and dibenzofurans using U.S. EPA Method 8290. Additional quality control (QC) field duplicate samples representing 20 percent of the total samples for each analysis, would also be collected and analyzed.
- An estimated 92,390 bcy (106,250 lcy assuming a 15 percent volume reduction during compaction) of clean compacted fill material would be required to backfill the Unit 1 borrow pits and an estimated 49,000 bcy (56,350 lcy) would be required to backfill the Unit 2 landfill ravine area to surrounding grade.
- An estimated 25,300 bcy of recyclable (inert) concrete debris would be separated, crushed, and stockpiled for reuse in construction of a potential new runway. This total consists of 11,000 bcy of recyclable concrete recovered from an estimated 31,200 bcy of potentially nonhazardous Unit 1 construction debris from the middle pit, and approximately 14,300 bcy of recyclable concrete recovered from an estimated 35,800 bcy of potentially nonhazardous Unit 2 surface debris.
- Waste profile sampling (including sample collection, analyses, and data validation) of the three stockpiles of segregated materials (potential RCRA hazardous waste, California hazardous waste, and nonhazardous waste) would be performed to confirm the final classification and disposal requirements prior

Table B4-1
Analytical Schedule for Waste Profile Sampling*

Analyte	Method
Volatile organic compounds	U.S. EPA Method 8260B
Toxicity characteristic leaching procedure (TCLP)	U.S. EPA Method 1311 and CLP/624-M
Semivolatile organic compounds	U.S. EPA Method 8270C
Pesticides and polychlorinated biphenyls (PCBs)	U.S. EPA Methods 8081A and 8082
TCLP pesticides and PCBs	U.S. EPA Methods 1311, 8081A, and 8082
Target analyte list metals	U.S. EPA Method 6020
TCLP metals	U.S. EPA Methods 1311 and 6010B/7000
Dioxins and dibenzofurans	U.S. EPA Method 8290

Note:
* waste profile sampling is assumed to include 217 samples for Alternative 2 and 65 samples for Alternative 3 for the parameters listed here, except for dioxins and dibenzofurans; it is assumed that under Alternative 2, 92 samples would be analyzed for dioxins and dibenzofurans

Acronyms/Abbreviations:
CLP – (U.S. EPA) Contract Laboratory Program
U.S. EPA – United States Environmental Protection Agency

to off-site disposal. One composite sample (composite of 5 discrete fractions) would be collected per 500 lcy of material. Waste profiling is assumed to include 217 samples, which would be analyzed according to the schedule presented in Table B4-1.

- An estimated 4,000 bcy of Unit 2 RCRA hazardous waste would be hauled to a permitted Class I facility for disposal. For purposes of this cost estimate, it is assumed that the RCRA hazardous waste would be hauled 400 miles to the Chemical Waste Management, Inc. (CWMI) Kettleman Hills, California, landfill for disposal.
- An estimated 27,700 bcy of Unit 1 RCRA nonhazardous waste (California hazardous and nonhazardous waste) and inert waste consisting of construction debris, and an estimated 77,600 bcy of Unit 2 RCRA nonhazardous waste and inert waste consisting of 31,500 bcy of surface debris and 46,100 bcy of landfill waste would be hauled to a permitted facility for disposal. For purposes of this cost estimate, it is assumed that these materials would be hauled 110 miles to the Allied Waste Copper Mountain Landfill at Wellton, Arizona, for disposal.

B4.3 ALTERNATIVE 3 SPECIFIC ASSUMPTIONS

The following specific assumptions were made when developing the cost estimate for Alternative 3.

- A potential new runway would be constructed.
- Development of land-use controls and preparation of an implementation plan are assumed to cost $40,000.

- An estimated 30 bcy of an identified California hazardous waste hot spot in Unit 1 construction debris about 0.5 foot thick would be excavated from an area of about 1,625 square feet (0.037 acres). This debris would be consolidated with the fraction of Unit 2 surface debris also identified as potential California hazardous waste based on RI sample analyses.
- An estimated 6,040 bcy of construction debris located along the north side of the easternmost borrow pit in Unit 1 would be consolidated at the west end of that borrow pit so it would not be left in place beneath the footprint of a potential new runway.
- An estimated 53,700 bcy (61,800 lcy) of clean compacted soil would be required to backfill those portions of the Unit 1 borrow pits that are not already filled to surrounding grade with construction debris.
- An estimated 49,800 bcy of Unit 2 surface debris covering an area of approximately 17.6 acres must be consolidated into three fractions (potential RCRA hazardous waste, potential California hazardous waste, and potentially nonhazardous waste) in preparation for waste profiling, off-site disposal, inert (not hazardous) concrete recycling, and inert surface debris reuse on-site. The estimated 4,000 bcy of potential RCRA hazardous waste represents about 8 percent of the total volume, and the 10,000 bcy of potential California hazardous waste represents about 20 percent of the total volume. The potentially nonhazardous (and inert) waste is the remaining 35,800 bcy (to include concrete recycling and on-site reuse of inert fraction).
- Soil confirmation sampling (including sample collection, analysis, and data validation) of the Unit 1 construction debris hot spot area would consist of five samples for analyses of TAL metals using U.S. EPA Method 6020. The Unit 2 surface debris area would include 36 samples for analyses of TAL metals using U.S. EPA Method 6020, SVOCs using U.S. EPA Method 8270C, and pesticides and PCBs using U.S. EPA Methods 8081A and 8082. Additional QC field duplicate samples representing 20 percent of the total samples for each analysis, would also be collected and analyzed.
- An estimated 14,300 bcy of recyclable (inert) concrete debris would be separated from the 35,800 bcy of Unit 2 surface debris not identified as hazardous, then crushed and stockpiled for reuse in construction of a potential new runway and the asphalt pavement cap.
- An estimated 2,200 bcy of inert (not hazardous) Unit 2 surface debris (excluding concrete) would be used to backfill below-grade portions of the Unit 2 landfill ravine to reduce the volume of surface debris requiring off-site disposal.
- Waste profile sampling would be the same as described for Alternative 2 in Section B4.2, and is assumed to include 65 samples, which would be analyzed according to the schedule presented in Table B4-1. Additional QC field duplicate samples representing 20 percent of the total samples for each analysis, would also be collected and analyzed.
- An estimated 4,000 bcy of Unit 2 RCRA hazardous waste would be hauled to a permitted Class I facility for disposal. For purposes of this cost estimate, it is assumed that the RCRA hazardous waste would be hauled 400 miles to the CWMI Kettleman Hills, California, landfill for disposal.

- An estimated 30 bcy of Unit 1 RCRA nonhazardous waste (California hazardous waste) consisting of construction debris, and an estimated 29,300 bcy of Unit 2 RCRA nonhazardous waste (California hazardous and nonhazardous waste) and inert waste consisting of surface debris would be hauled to a permitted facility for disposal. For purposes of this cost estimate, it is assumed that these materials would be hauled 110 miles to the Allied Waste Copper Mountain Landfill at Wellton, Arizona, for disposal.

- A 2.56-acre portion of the easternmost borrow pit in Unit 1 and a 1.67-acre rectangular portion at the north end of the Unit 2 landfill ravine would be covered by a potential new runway. Although not specifically a landfill cap, a new runway would effectively function as an alternative cap over the portions of Units 1 and 2 that it covers. The costs for construction of a potential new runway itself are not included in the Alternative 3 cost estimate because, for purposes of this alternative, it is assumed runway construction would occur regardless of whether any remedial action is implemented at IR Site 2. Further, the potential runway construction costs would be funded separately from any remedial action. However, costs for ancillary activities required to make IR Site 2 suitable for runway construction (e.g., surface debris consolidation and disposal, Unit 1 backfilling, and placement of stone columns via vibroreplacement) are part of this alternative.

- Stone columns overlain by a load transfer platform (plastic geogrid-wrapped stone mat) would be constructed where a potential new runway spans the north end of the Unit 2 landfill ravine. The stone columns and load transfer platform would provide structural support for a potential new runway and prevent differential settlement between the native soil materials and the landfill waste in the ravine. A series of 18- to 24-inch-diameter stone columns would be installed via vibroreplacement on 7-foot center-to-center spacing throughout the 1.67-acre (72,600 square feet) Unit 2 landfill ravine area to be overlain by a potential new runway. The estimated 1,525 stone columns required would range from about 3 to 14 feet in length. For cost estimating purposes, an average 10-foot length was assumed for each column.

- An estimated 7.07-acre (308,100 square feet) area encompassing the remainder of the Unit 2 landfill ravine and a 50-foot minimum zone around the perimeter of the ravine would be covered by a 6-inch-thick asphalt pavement alternative landfill cap (assumed to be typical hot mix asphalt). The cap would be underlain by a gravel base course (assumed to be 4 inches thick), which would be underlain by an initial cover layer of clean soil. Backfilling with clean soil, where performed (primarily in the northern portion of the landfill ravine), would serve as the initial cover. In other areas where wastes may be at the surface (primarily in the southern portion), additional clean soil may be needed to form the initial cover. However, since the extent of these areas is unknown and would be determined at the time of backfilling and cap construction, costs were not estimated for any additional soil.
- Unless otherwise noted, it is assumed that materials used for landfill cap construction are derived from locally available sources.

- An estimated 22,200 bcy (25,500 lcy) of clean soil would be used to construct a 1-foot-thick soil cover over 13.76 acres of Unit 1 (excludes the 2.56-acre portion of Unit 1 to be covered by a potential new runway).
- Clean soil for backfilling and soil cover would be obtained from potential new runway construction east of the site.
- Two new monitoring wells would be constructed and are assumed to be 2 inches in diameter and 30 feet deep. These new wells would be monitored in conjunction with two existing IR Site 2 wells.
- Postclosure monitoring would be conducted at four IR Site 2 wells and would include quarterly measurement of water levels and semiannual sampling for a period of 5 years.
- Groundwater samples collected semiannually during the postclosure monitoring period would be analyzed for detection monitoring constituents including volatile organic compounds (VOCs) using U.S. EPA Method 8260C, TAL metals using U.S. EPA Methods 6020 and 7470 (for mercury), anions using U.S. EPA Method 300.0, pH using U.S. EPA Method 150.1, and total dissolved solids (TDS) using U.S. EPA Method 160.1, plus SVOCs using U.S. EPA Method 8270B and pesticides/PCBs using U.S. EPA Methods 8081/8082 during the fifth year annual sampling event.
- Groundwater monitoring would be discontinued after 5 years if results of the 5-year review continue to indicate that groundwater had not been impacted by a release of contamination from the site.
- O&M costs would be incurred annually beginning at the end of the construction activities and continuing for 30 years. These O&M costs would cover long-term monitoring and reporting (first 5 years only) and annual inspection and maintenance of the asphalt pavement cap, including a $50,000 cap repair during year 15 of the 30-year postclosure maintenance period.

B4.4 ALTERNATIVE 4 SPECIFIC ASSUMPTIONS

The following specific assumptions were made when developing the cost estimate for Alternative 4.

- A potential new runway would not be constructed; the existing runway would remain.
- Development of land-use controls and preparation of an implementation plan are assumed to cost $40,000.
- An estimated 30 bcy of an identified California hazardous waste hot spot in Unit 1 construction debris about 0.5 foot thick would be excavated from an area of about 1,625 square feet (0.037 acres). This debris would be consolidated with the fraction of Unit 2 surface debris also identified as potential California hazardous waste based on RI sample analyses.
- Those portions of the Unit 1 borrow pits that are not at surrounding grade would not be backfilled to surrounding grade.
- An estimated 49,800 bcy of Unit 2 surface debris covering an area of approximately 17.6 acres must be consolidated into three fractions (potential

RCRA hazardous waste, potential California hazardous waste, and potentially nonhazardous waste) in preparation for waste profiling, off-site disposal, inert concrete recycling, and inert debris reuse on-site. The estimated 4,000 bcy of potential RCRA hazardous waste represents about 8 percent of the total volume, and the 10,000 bcy of potential California hazardous waste represents about 20 percent of the total volume. The potentially nonhazardous (and inert) waste is the remaining 35,800 bcy (to include inert concrete recycling and reuse of inert fraction).

- Soil confirmation sampling (including sample collection, analysis, and data validation) of the Unit 1 construction debris hot spot area would consist of five samples for analyses of TAL metals using U.S. EPA Method 6020. The Unit 2 surface debris area would include 36 samples for analyses of TAL metals using U.S. EPA Method 6020, SVOCs using U.S. EPA Method 8270C, and pesticides and PCBs using U.S. EPA Methods 8081A and 8082. Additional QC field duplicate samples representing 20 percent of the total samples for each analysis, would also be collected and analyzed.
- An estimated 14,300 bcy of recyclable (inert) concrete debris would be separated from the 35,800 bcy of Unit 2 surface debris not identified as hazardous, then crushed and stockpiled for reuse in construction of the asphalt pavement cap (base course) and/or other NAF El Centro projects as needed.
- An estimated 10,300 bcy of inert (not hazardous) Unit 2 surface debris (excluding concrete) would be used to backfill below-grade portions of the Unit 2 landfill ravine to reduce the volume of surface debris requiring off-site disposal.
- Waste profile sampling would be the same as described for Alternative 2 in Section B4.2, and is assumed to include 50 samples, which would be analyzed according to the schedule presented in Table B4-1. Additional QC field duplicate samples representing 20 percent of the total samples for each analysis, would also be collected and analyzed.
- An estimated 4,000 bcy of Unit 2 RCRA hazardous waste would be hauled to a permitted Class I facility for disposal. For purposes of this cost estimate, it is assumed that the RCRA hazardous waste would be hauled 400 miles to the CWMI Kettleman Hills, California, landfill for disposal.
- An estimated 30 bcy of Unit 1 RCRA nonhazardous waste (California hazardous waste) consisting of construction debris, and an estimated 21,200 bcy of Unit 2 RCRA nonhazardous waste (California hazardous and nonhazardous waste) and inert waste consisting of surface debris would be hauled to a permitted facility for disposal. For purposes of this cost estimate, it is assumed that these materials would be hauled 110 miles to the Allied Waste Copper Mountain Landfill at Wellton, Arizona, for disposal.
- An estimated 9.6-acre (418,700 square feet) area encompassing the Unit 2 landfill ravine and a 50-foot minimum zone around the perimeter of the ravine would be covered by a 6-inch-thick asphalt pavement alternative landfill cap (assumed to be typical hot mix asphalt). The cap would be underlain by a gravel base course (assumed to be 4 inches thick), which would be underlain by an

initial cover layer of clean soil. Backfilling with clean soil, where performed (primarily in the northern portion of the landfill ravine), would serve as the initial cover. In other areas where wastes may be at the surface (primarily in the southern portion), additional clean soil may be needed to form the initial cover. However, since the extent of these areas is unknown and would be determined at the time of backfilling and cap construction, costs were not estimated for any additional soil.

- Unless otherwise noted, it is assumed that materials used for landfill cap construction are derived from locally available sources.
- An estimated 15,800 bcy (18,170 lcy) of clean soil would be used to construct a 1-foot-thick soil cover over 9.8 acres of Unit 1 (assumes only the extent of the borrow pits would be covered, since the borrow pits would not be backfilled to surrounding grade).
- Clean soil for backfilling and soil cover would be obtained from existing or future stockpiles of excess soil generated from other on-base construction projects.
- Two new monitoring wells would be constructed and are assumed to be 2 inches in diameter and 30 feet deep. These new wells would be monitored in conjunction with two existing IR Site 2 wells.
- Postclosure monitoring would be conducted at four IR Site 2 wells and would include quarterly measurement of water levels and semiannual sampling for a period of 5 years.
- Groundwater samples collected semiannually during the postclosure monitoring period would be analyzed for detection monitoring constituents including VOCs using U.S. EPA Method 8260C, TAL metals using U.S. EPA Methods 6020 and 7470 (for mercury), anions using U.S. EPA Method 300.0, pH using U.S. EPA Method 150.1, and TDS using U.S. EPA Method 160.1, plus SVOCs using U.S. EPA Method 8270B and pesticides/PCBs using U.S. EPA Methods 8081/8082 during the fifth year annual sampling event.
- Groundwater monitoring would be discontinued after 5 years if results of the 5-year review continued to indicate that groundwater had not been impacted by a release of contamination from the site.
- O&M costs would be incurred annually beginning at the end of the construction activities and continuing for 30 years. These O&M costs would cover long-term monitoring and reporting (first 5 years only) and annual inspection and maintenance of the asphalt pavement cap, including a $50,000 cap repair during year 15 of the 30-year postclosure maintenance period.

Section B5
COST ANALYSIS

This section presents the results of the RACER 2005 cost estimates and the net present value for each of the remedial alternatives (excluding Alternative 1, which has no associated costs). The cost estimates are based on the assumptions described in Section B4. Detailed descriptions, which are the basis for the cost assumptions, are presented in Section 4 in the main FS Report.

A summary of the cost estimates for the major components of Alternatives 2, 3, and 4 are provided in Tables B5-1, B5-2, and B5-3, respectively. The net present values were calculated using an O&M period of 30 years, and a discount rate of 2.10 percent, for Alternatives 3 and 4. Alternative 2 does not include O&M. Refer to Section B3.3 for a discussion of the net present value calculation.

Table B5-1
Alternative 2 – Cost Estimate Summary

Description	Cost[a]
Remedial Design	$136,000
Capital Cost[b]	
Construct decontamination facility	237,000
Destroy IR Site 2 monitoring well network (11 wells)	9,000
Excavate and stockpile Unit 1 construction debris and Unit 2 landfill waste (~84,800 bcy[c])	428,000
Recycle concrete in construction and surface debris classified as "inert" (not hazardous) (25,300 bcy)	534,000
Conduct soil confirmation sampling and analysis (130 soil samples)	179,000
Conduct waste profile sampling and analysis (260 debris/waste samples)	978,000
Load, haul, and dispose of debris and waste at permitted off-site disposal facilities (4,000 bcy to Class I facility and 105,300 bcy to Class II facility)[d]	8,840,000
Backfill excavated areas with clean compacted fill material (~162,600 lcy; ~141,400 bcy)[e]	677,000
Subtotal Costs	**12,018,000**
Contingency[f]	2,404,000
Total Alternative 2[g] (estimated 14-month construction period)	**$14,422,000**

Notes:
[a] cost values have been rounded to the nearest $1,000
[b] includes direct and indirect costs; indirect costs include contractor indirect, overhead, and profit; these costs are computed by an internal RACER cost model based on the project duration, the project OSHA safety level, complexity of the alternative, and location-specific considerations (local labor rates, taxes, etc., included in the RACER database)
[c] bcy represent the in-place volume of material, while lcy represent the loose volume of material (assumed to be 15 percent greater than the in-place volume, except for concrete debris where lcy is assumed to equal bcy [i.e., incompressible])
[d] in addition to the excavated Unit 1 construction debris and Unit 2 landfill waste, this line item also includes Unit 2 surface debris (less recycled concrete)
[e] if a potential new runway were not constructed, backfilling would be performed only to the extent necessary to comply with airfield operation and clear zone requirements, and the backfilling costs would be reduced accordingly; in addition, backfill soil that would have been taken from the new runway construction would instead be obtained from other on-base sources; depending on the source, this soil may need to be sampled to verify that it is inert (not hazardous)
[f] a 20 percent contingency has been added to cover cost increases that may occur as a result of unforeseen conditions and changes that typically occur on remediation projects
[g] costs reflect the net present value in 2005 dollars

Acronyms/Abbreviations:
bcy – bank cubic yards
IR – Installation Restoration (Program)
lcy – loose cubic yards
OSHA – Occupational Safety and Health Administration
RACER – Remedial Action Cost Engineering and Requirements

Table B5-2
Alternative 3 – Cost-Estimate Summary

Description	Cost[a]	Years 2 to 5	Years 5 to 30	Total Cost[a]
Remedial Design	$323,000			$323,000
Land-use controls and implementation plan	40,000			40,000
Capital Cost – Environmental Work[b,c]				
Construct decontamination facility	85,000			85,000
Destroy IR Site 2 monitoring wells (11 wells)	9,000			9,000
Construct new monitoring wells (2 wells)	18,000			18,000
Consolidate Unit 1 California hazardous waste (construction debris) hot spot (30 bcy[d]) with Unit 2 California hazardous waste (surface debris); relocate Unit 1 construction debris (6,040 bcy) located along north side of eastern pit to west side of that pit; and backfill Unit 2 landfill ravine low areas to grade with inert (not hazardous) Unit 2 surface debris and/or relocated Unit 2 landfill waste (2,200 bcy)	26,000			26,000
Recycle inert concrete in Unit 2 surface debris identified as nonhazardous (14,300 bcy)	296,000			296,000
Conduct soil confirmation sampling and analysis (49 soil samples)	59,000			59,000
Conduct waste profile sampling and analysis (65 debris/waste samples)	248,000			248,000
Load, haul, and dispose of surface debris at permitted off-site disposal facilities (4,000 bcy to Class I facility and 29,300 bcy to Class II facility)	2,956,000			2,956,000
Backfill below-grade areas of Unit 1 with clean compacted fill material (~61,800 lcy[d]; 53,700 bcy) and place a 1-foot-thick clean soil cover over 13.76 acres of Unit 1 (25,500 lcy; 22,200 bcy)	543,000			543,000
Construct 6-inch-thick asphalt pavement cap covering southern three-quarters of Unit 2 landfill ravine (7.07 acres or 308,100 square feet), with assumed 4-inch-thick base course (recycled concrete)	1,045,000			1,045,000
Capital Cost – Runway Construction Work[b,e]				
Install stone columns (via vibroreplacement) and 3-foot-thick geogrid/aggregate mat (1,525 24-inch columns on 7-foot centers and 3-foot-thick load transfer platform [1.67 acres or 72,600 square feet])	1,215,000			1,215,000
Subtotal Capital Costs				**6,863,000**

(table continues)

Table B5-2 (continued)

Description	Cost[a]	Years 2 to 5	Years 5 to 30	Total Cost[a]
Operation and Maintenance (O&M)				
Long-term monitoring[f] (5 years)	30,700	128,300		159,000
Semiannual and annual reports (5 years)	12,000	48,000		60,000
Five-year review and report[g]		9,000		9,000
Cap Maintenance (30 years)[h]		4,000	75,000	79,000
Total Capital and O&M Costs				**7,170,000**
Contingency – environmental work[c,i]				1,176,000
Contingency – runway construction work[e,i]				243,000
Total Alternative 3 (estimated 12-month construction period; total cost includes capital, O&M, and contingency; runway construction work cost portion is $1,458,000[e])				**8,589,000**
Net Present Value of Alternative 3 (runway construction work cost portion is $1,458,000)[e,j]				**$8,496,000**

Notes:

[a] cost values have been rounded to the nearest $1,000

[b] includes direct and indirect costs; indirect costs include contractor indirect, overhead, and profit; these costs are computed by an internal RACER cost model based on the project duration, the project OSHA safety level, complexity of the alternative, and location-specific considerations (local labor rates, taxes, etc., included in the RACER database)

[c] costs for environmental work to be funded by ER,N money

[d] bcy represent the in-place volume of material, while lcy represent the loose volume of material (assumed to be 15 percent greater than the in-place volume, except for concrete debris where lcy are assumed to equal bcy [i.e., incompressible])

[e] costs for runway construction work to be funded by MILCON or NAF El Centro capital improvement money

[f] includes quarterly measurement of water levels and semiannual sampling at four monitoring wells

[g] it is assumed that at 5-year review, if water levels have remained below bottom contact of debris and waste materials and no evidence of a release to groundwater has occurred, discontinuation of monitoring would be recommended

[h] assumes annual inspection maintenance costs of $1,000 per year for Years 2 to 30, with an additional $50,000 in repairs during Year 15

[i] a 20 percent contingency has been added to cover cost increases that may occur as a result of unforeseen conditions and changes that typically occur on remediation projects

[j] costs reflect the net present value in 2005 dollars

Acronyms/Abbreviations:

bcy – bank cubic yards
ER,N – Environmental Restoration, Navy
IR – Installation Restoration (Program)
lcy – loose cubic yards
MILCON – military construction
OSHA – Occupational Safety and Health Administration
RACER – Remedial Action Cost Engineering and Requirements

Table B5-3
Alternative 4 – Cost Estimate Summary

Description	Cost[a]	Years 2 to 5	Years 5 to 30	Total Cost[a]
Remedial Design	$197,000			$197,000
Land-use controls and implementation plan	40,000			40,000
Capital Cost[b]				
Construct decontamination facility	85,000			85,000
Destroy IR Site 2 monitoring wells (11 wells)	9,000			9,000
Construct new monitoring wells (2 wells)	18,000			18,000
Consolidate Unit 1 California hazardous waste (construction debris) hot spot (30 bcy[c]) with Unit 2 California hazardous waste (surface debris), and backfill landfill ravine low areas to grade with Unit 2 inert (not hazardous) surface debris and/or relocated Unit 2 landfill waste (10,300 bcy)	33,000			33,000
Recycle inert concrete in Unit 2 surface debris identified as nonhazardous (14,300 bcy)	296,000			296,000
Conduct soil confirmation sampling and analysis (49 soil samples)	59,000			59,000
Conduct waste profile sampling and analysis (50 debris/waste samples)	192,000			192,000
Load, haul, and dispose of surface debris at permitted off-site disposal facilities (4,000 bcy to Class I facility and 21,200 bcy to Class II facility)	2,392,000			2,392,000
Place a 1-foot clean soil cover over 9.8 acres of Unit 1 (18,100 lcy; 15,800 bcy); includes loading and hauling 15,800 bcy clean soil a maximum of 2 miles to the site from an on-base location(s) (to be determined)[d]	202,000			202,000
Construct 6-inch-thick asphalt pavement cap covering Unit 2 landfill ravine (9.6 acres) with assumed 4-inch-thick base course (recycled concrete)	1,421,000			1,421,000
Subtotal Capital Costs				**4,944,000**
Operation and Maintenance (O&M)				
Long-term monitoring[e] (5 years)	30,700	128,300		159,000
Semiannual and annual reports (5 years)	12,000	48,000		60,000
Five-year review and report[f]		9,000		9,000
Cap Maintenance (30 years)[g]		4,000	75,000	79,000
Total Capital and O&M Costs				**5,251,000**
Contingency[h]				1,035,000
Total Alternative 4 (estimated 10-month construction period; total cost includes capital, O&M, and contingency)				**6,286,000**
Net Present Value of Alternative 4[i]				**$6,193,000**

(table continues)

Table B5-3 (continued)

Notes:

[a] cost values have been rounded to the nearest $1,000

[b] includes direct and indirect costs; indirect costs include contractor indirect, overhead, and profit; these costs are computed by an internal RACER cost model based on the project duration, the project OSHA safety level, complexity of the alternative, and location-specific considerations (local labor rates, taxes, etc., included in the RACER database)

[c] bcy represent the in-place volume of material, while lcy represent the loose volume of material (assumed to be 15 percent greater than the in-place volume, except for concrete debris where lcy are assumed to equal bcy [i.e., incompressible])

[d] soil cover material to be obtained from excess stockpiled soil from other on-base sources; depending on the source, this soil may need to be sampled to verify that it is not hazardous

[e] includes quarterly measurement of water levels and semiannual sampling at four monitoring wells

[f] it is assumed that at 5-year review, if water levels have remained below bottom contact of debris and waste materials and no evidence of a release to groundwater has occurred, discontinuation of monitoring would be recommended

[g] assumes annual inspection maintenance costs of $1,000 per year for Years 2 to 30, with an additional $50,000 in repairs during Year 15

[h] a 20 percent contingency has been added to cover cost increases that may occur as a result of unforeseen conditions and changes that typically occur on remediation projects

[i] costs reflect the net present value in 2005 dollars

Acronyms/Abbreviations:

bcy – bank cubic yards
lcy – loose cubic yards
OSHA – Occupational Safety and Health Administration
RACER – Remedial Action Cost Engineering and Requirements

Section B6
REFERENCES

Earth Tech. *See* Earth Tech, Inc.

Earth Tech, Inc. 2005. Remedial Action Cost Engineering and Requirements (RACER) /System 2005, Version 7.0. January.

United States Environmental Protection Agency. 1987. Remedial Action Costing Procedures Manual. EPA/600/8-87/049. October.

———. 1988. Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA. OSWER Directive 9355.1. EPA/540/G-89/004. Interim Final. October.

———. 1993. Revision to OMB Circular A-94 on Guidelines and Discount Rates for Benefit-Cost Analysis. Office of Solid Waste and Emergency Response (OSWER) Directive No. 9355.3-20. Washington, DC. 25 June.

———. 2000. A Guide to Developing and Documenting Cost Estimates During the Feasibility Study. Office of Emergency and Remedial Response, Washington, DC. EPA 540-R-00-002. July.

U.S. EPA. *See* United States Environmental Protection Agency.

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ATTACHMENT A

PROJECT COST DETAIL REPORT

Site Cost Detail Report
(with Markups)

Folder: CTO 024 Rev May_05

Project

Name: CTO 024 NAF El Centro, CA IR Site 2 FS
ID: Navy Clean CTO 024 (23818-024)
Location: EL CENTRO, CALIFORNIA
Modifiers: **Material** 1.406
Labor 1.371
Equipment 1.083
Category: Feasibility Study
Report Option: Calendar Year
Description: The feasibility study consists of two alternatives. Alt 2 includes excavation, recycling of concrete ddebris, and off site disposal of remaining debris and waste and no longterm monitoring. Alt 3 includes recycling of concret debris, hot spot removal, off site disposal of surface debris and 5 years of water monitoring.

Site

Name: Alt 2 Excav and Backfill Unit 1 and 2
ID: IR Site 2 Units 1 & 2
Type: Excavate & Dispose of Soil Off Site
Description: Excavate 84,800 BCY and backfill to surroundig grade 141,390 BCY (162,600LCY). Dispose of 49,800 cy of surface debris. (Rev 3/2005)
Program: N/A

Estimator Information:

Name: R Stark
Title: Project Estimator
Agency/Org./Office: Bechtel National, Inc
Business Address: PO Box 193965
San Fransisco, CA 94119-3965
Phone: 415-768-2465

Cost Database Date: 2005
Cost Type: User-Defined
Print Date: 5/20/2005 2:45:42 PM

Site Cost Detail Report
(with Markups)

Email: rstark@bechtel.com
Prepared Date: 03/28/2005

Reviewer Information:
Name:
Title:
Agency/Org./Office:
Business Address:
Phone:
Email:
Date Reviewed:

Phase Element (Markup Template)	Direct Cost	General Conditions	Overhead	Sub Profit	Prime Markup on Sub	Prime Profit	Risk	Owner Cost	Markup Total	Total
Remedial Design (Navy CleanB No Owner	$54,025	$4,051	$67,183	$0	$0	$10,645	$0	$0	$81,879	$135,904
Backfill Unit 1 Borrow Pit (Navy Clean C (No SC	$557,743	$6,730	$34,115	$5,395	$19,071	$52,960	$0	$0	$118,271	$676,014
Decon Facility (Navy CleanB No Owner	$161,882	$17,154	$39,371	$0	$0	$18,565	$0	$0	$75,089	$236,971
Demo Monitoring Wells (Navy CleanB No Owner	$5,600	$1,699	$668	$0	$0	$677	$0	$0	$3,044	$8,644
Excavate Unit 1 and 2 (Navy Clean C (No SC	$304,848	$19,489	$70,298	$0	$0	$33,544	$0	$0	$123,332	$428,180
Haul debris off-site	$7,552,568								$1,286,945	$8,839,513

Cost Database Date: 2005
Cost Type: User-Defined
Print Date: 5/20/2005 2:45:42 PM

Site Cost Detail Report
(with Markups)

Phase Element (Markup Template)	Direct Cost	General Conditions	Overhead	Sub Profit	Prime Markup on Sub	Prime Profit	Risk	Owner Cost	Markup Total	Total
(Navy Clean C (No SC		$16,262	$325,230	$0	$252,957	$692,496	$0	$0		
Recycle Concrete Debris	$445,723								$75,802	$521,525
(Navy Clean C (No SC		$4,677	$9,905	$4,490	$15,873	$40,857	$0	$0		
Soil Confirmation	$128,981								$50,486	$179,467
(Navy CleanB No Owner		$8,124	$28,337	$0	$0	$14,025	$0	$0		
Waste Profiling	$692,505								$285,910	$978,415
(Navy CleanB No Owner		$34,630	$174,624	$0	$0	$76,657	$0	$0		
Total Site Cost	$9,903,875	$112,816	$749,731	$9,885	$287,901	$940,425	$0	$0	$2,100,758	$12,004,633

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ATTACHMENT B

SITE COST DETAIL REPORT FOR ALTERNATIVE 2

Phase Element Technology Cost Detail Report
(without Markups)

Folder: CTO 024 Rev May_05

Project

Name: CTO 024 NAF El Centro, CA IR Site 2 FS
ID: Navy Clean CTO 024 (23818-024)
Location: EL CENTRO, CALIFORNIA
Modifiers: **Material** 1.406
Labor 1.371
Equipment 1.083
Category: Feasibility Study
Report Option: Calendar Year
Description: The feasibility study consists of two alternatives. Alt 2 includes excavation, recycling of concrete ddebris, and off site disposal of remaining debris and waste and no longterm monitoring. Alt 3 includes recycling of concret debris, hot spot removal, off site disposal of surface debris and 5 years of water monitoring.

Site

Name: Alt 2 Excav and Backfill Unit 1 and 2
ID: IR Site 2 Units 1 & 2
Type: Excavate & Dispose of Soil Off Site
Description: Excavate 84,800 BCY and backfill to surroundig grade 141,390 BCY (162,600LCY). Dispose of 49,800 cy of surface debris. (Rev 3/2005)
Program: N/A

Estimator Information:

Name: R Stark
Title: Project Estimator
Agency/Org./Office: Bechtel National, Inc
Business Address: PO Box 193965

Cost Database Date: 2005
Cost Type: User-Defined

Print Date: 5/20/2005 2:47:07 PM

Phase Element Technology Cost Detail Report (without Markups)

San Fransisco, CA 94119-3965
Phone: 415-768-2465
Email: rstark@bechtel.com
Prepared Date: 03/28/2005

Reviewer Information:
Name:
Title:
Agency/Org./Office:
Business Address:
Phone:
Email:
Date Reviewed:

Phase Element

Name: Remedial Design
Type: Design
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate
Approach: None
Start Date: 1/1/2008
Description: Remedial design .

Media/Waste Type: Solids
Secondary Media/Waste Type: N/A
Contaminant: None
Secondary Contaminant: None
Markup Template: Navy CleanB No Owner Cost
O&M Markup Template: N/A

Phase Element Technology Cost Detail Report (without Markups)

Technology: Remedial Design

Element: Project Planning

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33010104	Sample collection, vehicle mileage charge, car or van	120.00	MI	0.23	0.00	0.00	$27.00	☐
33220102	Project Manager	28.00	HR	0.00	51.32	0.00	$1,437.01	☐
33220103	Office Manager	8.00	HR	0.00	56.83	0.00	$454.65	☐
33220105	Project Engineer	10.00	HR	0.00	49.77	0.00	$497.68	☐
33220106	Staff Engineer	44.00	HR	0.00	43.55	0.00	$1,916.28	☐
33220109	Staff Scientist	103.00	HR	0.00	42.70	0.00	$4,397.77	☐
33220110	QA/QC Officer	24.00	HR	0.00	41.97	0.00	$1,007.40	☐
33220111	Certified Industrial Hygienist	13.00	HR	0.00	53.26	0.00	$692.41	☐
33220112	Field Technician	17.00	HR	0.00	31.81	0.00	$540.75	☐
33220113	Secretarial/ Administrative	10.00	HR	0.00	25.54	0.00	$255.43	☐
33220114	Word Processing/Clerical	27.00	HR	0.00	22.16	0.00	$598.28	☐
33220115	Draftsman/CADD	12.00	HR	0.00	28.97	0.00	$347.62	☐
33240101	Other Direct Costs	1.00	LS	82.59	0.00	0.00	$82.59	☑
				Total Element Cost			**$12,254.87**	

Phase Element Technology Cost Detail Report (without Markups)

Element: Preliminary Design

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220102	Project Manager	4.00	HR	0.00	51.32	0.00	$205.29	☐
33220103	Office Manager	2.00	HR	0.00	56.83	0.00	$113.66	☐
33220105	Project Engineer	14.00	HR	0.00	49.77	0.00	$696.75	☐
33220106	Staff Engineer	36.00	HR	0.00	43.55	0.00	$1,567.87	☐
33220109	Staff Scientist	16.00	HR	0.00	42.70	0.00	$683.15	☐
33220110	QA/QC Officer	9.00	HR	0.00	41.97	0.00	$377.77	☐
33220112	Field Technician	5.00	HR	0.00	31.81	0.00	$159.05	☐
33220113	Secretarial/ Administrative	7.00	HR	0.00	25.54	0.00	$178.80	☐
33220114	Word Processing/Clerical	13.00	HR	0.00	22.16	0.00	$288.06	☐
33220115	Draftsman/CADD	11.00	HR	0.00	28.97	0.00	$318.65	☐
33240101	Other Direct Costs	1.00	LS	15.60	0.00	0.00	$15.60	☑
				Total Element Cost			**$4,604.65**	

Element: Intermediate Design

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220102	Project Manager	9.00	HR	0.00	51.32	0.00	$461.90	☐
33220103	Office Manager	5.00	HR	0.00	56.83	0.00	$284.16	☐
33220105	Project Engineer	29.00	HR	0.00	49.77	0.00	$1,443.27	☐

Phase Element Technology Cost Detail Report (without Markups)

Element: Intermediate Design

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220106	Staff Engineer	74.00	HR	0.00	43.55	0.00	$3,222.84	☐
33220109	Staff Scientist	67.00	HR	0.00	42.70	0.00	$2,860.69	☐
33220110	QA/QC Officer	17.00	HR	0.00	41.97	0.00	$713.57	☐
33220111	Certified Industrial Hygienist	5.00	HR	0.00	53.26	0.00	$266.31	☐
33220113	Secretarial/ Administrative	9.00	HR	0.00	25.54	0.00	$229.89	☐
33220114	Word Processing/Clerical	16.00	HR	0.00	22.16	0.00	$354.54	☐
33220115	Draftsman/CADD	21.00	HR	0.00	28.97	0.00	$608.33	☐
33240101	Other Direct Costs	1.00	LS	35.51	0.00	0.00	$35.51	☑
			Total Element Cost				**$10,481.00**	

Element: Prefinal Design

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220102	Project Manager	10.00	HR	0.00	51.32	0.00	$513.22	☐
33220103	Office Manager	6.00	HR	0.00	56.83	0.00	$340.99	☐
33220105	Project Engineer	44.00	HR	0.00	49.77	0.00	$2,189.79	☐
33220106	Staff Engineer	63.00	HR	0.00	43.55	0.00	$2,743.77	☐
33220109	Staff Scientist	57.00	HR	0.00	42.70	0.00	$2,433.72	☐
33220110	QA/QC Officer	24.00	HR	0.00	41.97	0.00	$1,007.40	☐

Phase Element Technology Cost Detail Report (without Markups)

Element: Prefinal Design

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220111	Certified Industrial Hygienist	27.00	HR	0.00	53.26	0.00	$1,438.08	☐
33220113	Secretarial/ Administrative	14.00	HR	0.00	25.54	0.00	$357.60	☐
33220114	Word Processing/Clerical	28.00	HR	0.00	22.16	0.00	$620.44	☐
33220115	Draftsman/CADD	40.00	HR	0.00	28.97	0.00	$1,158.73	☐
33240101	Other Direct Costs	1.00	LS	65.30	0.00	0.00	$65.30	☑
				Total Element Cost			**$12,869.03**	

Element: Final Design

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220102	Project Manager	9.00	HR	0.00	51.32	0.00	$461.90	☐
33220103	Office Manager	6.00	HR	0.00	56.83	0.00	$340.99	☐
33220105	Project Engineer	43.00	HR	0.00	49.77	0.00	$2,140.02	☐
33220106	Staff Engineer	62.00	HR	0.00	43.55	0.00	$2,700.22	☐
33220109	Staff Scientist	56.00	HR	0.00	42.70	0.00	$2,391.02	☐
33220110	QA/QC Officer	24.00	HR	0.00	41.97	0.00	$1,007.40	☐
33220111	Certified Industrial Hygienist	27.00	HR	0.00	53.26	0.00	$1,438.08	☐
33220113	Secretarial/ Administrative	14.00	HR	0.00	25.54	0.00	$357.60	☐
33220114	Word Processing/Clerical	25.00	HR	0.00	22.16	0.00	$553.97	☐

Phase Element Technology Cost Detail Report (without Markups)

Element: Final Design

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220115	Draftsman/CADD	40.00	HR	0.00	28.97	0.00	$1,158.73	☐
33240101	Other Direct Costs	1.00	LS	64.00	0.00	0.00	$64.00	☑
				Total Element Cost			**$12,613.92**	

Element: Bid Documents

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220102	Project Manager	3.00	HR	0.00	51.32	0.00	$153.97	☐
33220103	Office Manager	4.00	HR	0.00	56.83	0.00	$227.32	☐
33220105	Project Engineer	3.00	HR	0.00	49.77	0.00	$149.30	☐
33220106	Staff Engineer	3.00	HR	0.00	43.55	0.00	$130.66	☐
33220109	Staff Scientist	2.00	HR	0.00	42.70	0.00	$85.39	☐
33220110	QA/QC Officer	2.00	HR	0.00	41.97	0.00	$83.95	☐
33220111	Certified Industrial Hygienist	1.00	HR	0.00	53.26	0.00	$53.26	☐
33220113	Secretarial/ Administrative	7.00	HR	0.00	25.54	0.00	$178.80	☐
33220114	Word Processing/Clerical	6.00	HR	0.00	22.16	0.00	$132.95	☐
33240101	Other Direct Costs	1.00	LS	6.10	0.00	0.00	$6.10	☑
				Total Element Cost			**$1,201.70**	

Phase Element Technology Cost Detail Report (without Markups)

Total 1st Year Technology Cost	**$54,025.18**
Total Phase Element Cost	**$54,025.18**

Phase Element Technology Cost Detail Report (without Markups)

Folder: CTO 024 Rev May_05

Project

Name: CTO 024 NAF El Centro, CA IR Site 2 FS
ID: Navy Clean CTO 024 (23818-024)
Location: EL CENTRO, CALIFORNIA
Modifiers: **Material** 1.406
Labor 1.371
Equipment 1.083
Category: Feasibility Study
Report Option: Calendar Year
Description: The feasibility study consists of two alternatives. Alt 2 includes excavation, recycling of concrete ddebris, and off site disposal of remaining debris and waste and no longterm monitoring. Alt 3 includes recycling of concret debris, hot spot removal, off site disposal of surface debris and 5 years of water monitoring.

Site

Name: Alt 2 Excav and Backfill Unit 1 and 2
ID: IR Site 2 Units 1 & 2
Type: Excavate & Dispose of Soil Off Site
Description: Excavate 84,800 BCY and backfill to surroundig grade 141,390 BCY (162,600LCY). Dispose of 49,800 cy of surface debris. (Rev 3/2005)
Program: N/A

Estimator Information:
Name: R Stark
Title: Project Estimator
Agency/Org./Office: Bechtel National, Inc
Business Address: PO Box 193965

Cost Database Date: 2005
Cost Type: User-Defined
Print Date: 5/20/2005 2:48:00 PM

Phase Element Technology Cost Detail Report (without Markups)

San Fransisco, CA 94119-3965
Phone: 415-768-2465
Email: rstark@bechtel.com
Prepared Date: 03/28/2005

Reviewer Information:
Name:
Title:
Agency/Org./Office:
Business Address:
Phone:
Email:
Date Reviewed:

Phase Element

Name:	Backfill Unit 1 Borrow Pit	**Media/Waste Type:**	Soil
Type:	Remedial Action	**Secondary Media/Waste Type:**	N/A
Labor Rate Group:	System Labor Rate	**Contaminant:**	None
Analysis Rate Group:	System Analysis Rate	**Secondary Contaminant:**	None
Approach:	Ex Situ	**Markup Template:**	Navy Clean C (No SC Markup)
Start Date:	1/1/2008	**O&M Markup Template:**	N/A
Description:	Backfill w/ onsite material (141,390 bcy) to surrounding grade		

Phase Element Technology Cost Detail Report (without Markups)

Technology: Excavation

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030422	Unclassified Fill, 6" Lifts, On-Site, Includes Spreading and Compaction	162,600.00	CY	0.00	1.25	2.00	$528,450.00	☑
33170803	Spray washing, decontaminate heavy equipment, decontaminate heavy equipment	1.00	EA	0.00	466.85	0.00	$466.85	☐
				Total Element Cost			**$528,916.85**	
				Total 1st Year Technology Cost			**$528,916.85**	

Phase Element Technology Cost Detail Report (without Markups)

Technology: Professional Labor Management

Element: Professional Labor Percentage

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220138	Project Management Labor Cost	1.00	LS	0.00	5,289.17	0.00	$5,289.17	☑
33220139	Planning Documents Labor Cost	1.00	LS	0.00	5,289.17	0.00	$5,289.17	☑
33220140	Construction Oversight Labor Cost	1.00	LS	0.00	14,545.21	0.00	$14,545.21	☑
33220141	Reporting Labor Cost	1.00	LS	0.00	1,851.21	0.00	$1,851.21	☑
33220142	As-Built Drawings Labor Cost	1.00	LS	0.00	1,851.21	0.00	$1,851.21	☑
33220143	Public Notice Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220144	Site Closure Activities Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220145	Permitting Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220146	Responsible Party Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220147	Reimbursement Claims Preparation Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220148	Other Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐

Total Element Cost	**$28,825.96**
Total 1st Year Technology Cost	**$28,825.96**
Total Phase Element Cost	**$557,742.81**

Phase Element Technology Cost Detail Report (without Markups)

Folder: CTO 024 Rev May_05

Project

Name: CTO 024 NAF El Centro, CA IR Site 2 FS
ID: Navy Clean CTO 024 (23818-024)
Location: EL CENTRO, CALIFORNIA
Modifiers: **Material** 1.406
Labor 1.371
Equipment 1.083
Category: Feasibility Study
Report Option: Calendar Year
Description: The feasibility study consists of two alternatives. Alt 2 includes excavation, recycling of concrete ddebris, and off site disposal of remaining debris and waste and no longterm monitoring. Alt 3 includes recycling of concret debris, hot spot removal, off site disposal of surface debris and 5 years of water monitoring.

Site

Name: Alt 2 Excav and Backfill Unit 1 and 2
ID: IR Site 2 Units 1 & 2
Type: Excavate & Dispose of Soil Off Site
Description: Excavate 84,800 BCY and backfill to surroundig grade 141,390 BCY (162,600LCY). Dispose of 49,800 cy of surface debris. (Rev 3/2005)
Program: N/A

Estimator Information:
Name: R Stark
Title: Project Estimator
Agency/Org./Office: Bechtel National, Inc
Business Address: PO Box 193965

Cost Database Date: 2005
Cost Type: User-Defined
Print Date: 5/20/2005 2:48:44 PM

Phase Element Technology Cost Detail Report (without Markups)

San Fransisco, CA 94119-3965
Phone: 415-768-2465
Email: rstark@bechtel.com
Prepared Date: 03/28/2005

Reviewer Information:
Name:
Title:
Agency/Org./Office:
Business Address:
Phone:
Email:
Date Reviewed:

Phase Element

Name: Decon Facility
Type: Remedial Action
Labor Rate Group: System Labor Rate
Analysis Rate Group: Navy Clean CTO 024 Rates (Rev1)
Approach: Ex Situ
Start Date: 1/1/2008
Description: Decon facility to clean equipment

Media/Waste Type: N/A
Secondary Media/Waste Type: N/A
Contaminant: None
Secondary Contaminant: None
Markup Template: Navy CleanB No Owner Cost
O&M Markup Template: N/A

Phase Element Technology Cost Detail Report (without Markups)

Technology: Decontamination Facilities

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030109	Pad Subgrade Preparation	133.33	CY	0.00	5.23	1.26	$865.50	☐
17030257	Excavating, trench, medium soil, 4' to 6' deep, 1 C.Y. bucket, gradall, excludes sheeting or dewatering	2.49	BCY	0.00	0.75	0.28	$2.58	☐
17030501	Compaction, subgrade, 18" wide, 8" lifts, walk behind, vibrating plate	133.33	ECY	0.00	2.30	0.13	$323.58	☐
17030510	Dry Roll Gravel, Steel Roller	200.00	SY	0.00	0.67	0.28	$191.20	☐
18010102	Gravel, Delivered & Dumped	55.56	CY	28.98	2.89	1.73	$1,866.45	☐
18010103	Gravel (90%) & Sand Base (10%), with Calcium Chloride 3/4 - 1 Lb/CY	55.56	CY	23.26	2.91	2.23	$1,577.52	☐
18010201	Concrete Curb, 6" x 6"	166.00	LF	1.48	1.67	0.01	$524.54	☐
18020203	26" x 26", 5' Deep Area Drain with Grate	1.00	EA	1,314.62	2,029.46	45.89	$3,389.98	☐
18020321	6" Structural Slab on Grade	1,500.00	SF	3.44	3.42	0.07	$10,396.50	☐
19020313	5' x 5' x 5' Reinforced Concrete Sump	1.00	EA	1,799.05	3,334.90	54.11	$5,188.07	☐
19020604	12" x 12" CIP Concrete In-Ground Trench Drain with Metal Grate	28.00	LF	52.76	65.87	0.32	$3,330.40	☐

Phase Element Technology Cost Detail Report (without Markups)

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
19040606	Storage Tanks, steel, above ground, single wall, 5,000 gallon, incl. cradles, coating & fittings, excl. foundation, pumps or piping	1.00	EA	5,964.25	757.89	0.00	$6,722.15	☐
33080503	Polymeric Liner Anchor Trench, 3' x 1.5'	199.20	LF	0.05	1.94	0.27	$448.68	☐
33080532	8 oz/sy Erosion Control/Drainage Filter Fabric (80 Mil)	200.00	SY	1.00	0.68	0.03	$342.04	☐
33080571	Secure burial cell construction, polymeric liner and cover system, rough textured H.D. polyethylene (HDPE), 40 mil	1,800.00	SF	0.42	0.22	0.01	$1,174.68	☐
33170814	Spray washers, electric, 1800 psi, 4.8 GPM, pressure washer, with 50' hose	1.00	EA	2,360.67	0.00	0.00	$2,360.67	☐
33170823	Operation of Pressure Washer, Including Water, Soap, Electricity, Labor	1,560.00	HR	9.27	65.69	0.00	$116,931.83	☐
33231306	High Sump Level Switch for Avoiding Overflow	1.00	EA	305.38	219.13	0.00	$524.51	☐
33260623	(2 1/2", 4") PVC Double-wall Piping, with Fittings	30.00	LF	30.14	33.52	0.00	$1,909.73	☐

Phase Element Technology Cost Detail Report (without Markups)

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33290401	Pump, pedestal sump, single stage, 25 GPM, 1 H.P., 1-1/2" discharge	1.00	EA	3,169.12	641.82	0.00	$3,810.95	☐

Total Element Cost	**$161,881.56**
Total 1st Year Technology Cost	**$161,881.56**
Total Phase Element Cost	**$161,881.56**

Phase Element Technology Cost Detail Report (without Markups)

Folder: CTO 024 Rev May_05

Project

Name: CTO 024 NAF El Centro, CA IR Site 2 FS
ID: Navy Clean CTO 024 (23818-024)
Location: EL CENTRO, CALIFORNIA
Modifiers: **Material** 1.406
Labor 1.371
Equipment 1.083
Category: Feasibility Study
Report Option: Calendar Year
Description: The feasibility study consists of two alternatives. Alt 2 includes excavation, recycling of concrete ddebris, and off site disposal of remaining debris and waste and no longterm monitoring. Alt 3 includes recycling of concret debris, hot spot removal, off site disposal of surface debris and 5 years of water monitoring.

Site

Name: Alt 2 Excav and Backfill Unit 1 and 2
ID: IR Site 2 Units 1 & 2
Type: Excavate & Dispose of Soil Off Site
Description: Excavate 84,800 BCY and backfill to surroundig grade 141,390 BCY (162,600LCY). Dispose of 49,800 cy of surface debris. (Rev 3/2005)
Program: N/A

Estimator Information:
Name: R Stark
Title: Project Estimator
Agency/Org./Office: Bechtel National, Inc
Business Address: PO Box 193965

Cost Database Date: 2005
Cost Type: User-Defined
Print Date: 5/20/2005 2:49:27 PM

Phase Element Technology Cost Detail Report (without Markups)

San Fransisco, CA 94119-3965
Phone: 415-768-2465
Email: rstark@bechtel.com
Prepared Date: 03/28/2005

Reviewer Information:
Name:
Title:
Agency/Org./Office:
Business Address:
Phone:
Email:
Date Reviewed:

Phase Element

Name: Demo Monitoring Wells
Type: Remedial Action
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate
Approach: Ex Situ
Start Date: 1/1/2008
Description: Demo 9-2" dia x 25' wells and 2" dia x 50' wells

Media/Waste Type: N/A
Secondary Media/Waste Type: N/A
Contaminant: None
Secondary Contaminant: None
Markup Template: Navy CleanB No Owner Cost
O&M Markup Template: N/A

Phase Element Technology Cost Detail Report (without Markups)

Technology: DEMO MONITORING WELLS

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
95011201	Allowance	1.00	LS	1,700.00	1,000.00	2,900.00	$5,600.00	☑
						Total Element Cost	**$5,600.00**	
						Total 1st Year Technology Cost	**$5,600.00**	
						Total Phase Element Cost	**$5,600.00**	

Phase Element Technology Cost Detail Report (without Markups)

Folder: CTO 024 Rev May_05

Project

Name: CTO 024 NAF El Centro, CA IR Site 2 FS
ID: Navy Clean CTO 024 (23818-024)
Location: EL CENTRO, CALIFORNIA
Modifiers: **Material** 1.406
Labor 1.371
Equipment 1.083
Category: Feasibility Study
Report Option: Calendar Year
Description: The feasibility study consists of two alternatives. Alt 2 includes excavation, recycling of concrete ddebris, and off site disposal of remaining debris and waste and no longterm monitoring. Alt 3 includes recycling of concret debris, hot spot removal, off site disposal of surface debris and 5 years of water monitoring.

Site

Name: Alt 2 Excav and Backfill Unit 1 and 2
ID: IR Site 2 Units 1 & 2
Type: Excavate & Dispose of Soil Off Site
Description: Excavate 84,800 BCY and backfill to surroundig grade 141,390 BCY (162,600LCY). Dispose of 49,800 cy of surface debris. (Rev 3/2005)
Program: N/A

Estimator Information:
Name: R Stark
Title: Project Estimator
Agency/Org./Office: Bechtel National, Inc
Business Address: PO Box 193965

Cost Database Date: 2005
Cost Type: User-Defined
Print Date: 5/20/2005 2:52:03 PM

Phase Element Technology Cost Detail Report (without Markups)

San Fransisco, CA 94119-3965
Phone: 415-768-2465
Email: rstark@bechtel.com
Prepared Date: 03/28/2005

Reviewer Information:
Name:
Title:
Agency/Org./Office:
Business Address:
Phone:
Email:
Date Reviewed:

Phase Element

Name: Excavate Unit 1 and 2
Type: Remedial Action
Labor Rate Group: System Labor Rate
Analysis Rate Group: Navy Clean CTO 069 Rates
Approach: Ex Situ
Start Date: 1/1/2008
Description: Excavate 84,800 cy of debris

Media/Waste Type: Solids
Secondary Media/Waste Type: N/A
Contaminant: None
Secondary Contaminant: None
Markup Template: Navy Clean C (No SC Markup)
O&M Markup Template: N/A

Phase Element Technology Cost Detail Report (without Markups)

Technology: Excavation

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030279	4 CY, Crawler-mounted, Hydraulic Excavator	84,822.57	CY	0.00	1.00	2.24	$274,791.20	☐
33170803	Spray washing, decontaminate heavy equipment, decontaminate heavy equipment	1.00	EA	0.00	466.85	0.00	$466.85	☐
				Total Element Cost			**$275,258.04**	
				Total 1st Year Technology Cost			**$275,258.04**	

Phase Element Technology Cost Detail Report (without Markups)

Technology: Professional Labor Management

Element: Professional Labor Percentage

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220138	Project Management Labor Cost	1.00	LS	0.00	10,322.18	0.00	$10,322.18	☑
33220139	Planning Documents Labor Cost	1.00	LS	0.00	9,634.03	0.00	$9,634.03	☑
33220140	Construction Oversight Labor Cost	1.00	LS	0.00	8,257.74	0.00	$8,257.74	☑
33220141	Reporting Labor Cost	1.00	LS	0.00	1,376.29	0.00	$1,376.29	☑
33220144	Site Closure Activities Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220146	Responsible Party Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220147	Reimbursement Claims Preparation Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220148	Other Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐

Total Element Cost	**$29,590.24**
Total 1st Year Technology Cost	**$29,590.24**
Total Phase Element Cost	**$304,848.28**

Phase Element Technology Cost Detail Report (without Markups)

Folder: CTO 024 Rev May_05

Project

Name: CTO 024 NAF El Centro, CA IR Site 2 FS
ID: Navy Clean CTO 024 (23818-024)
Location: EL CENTRO, CALIFORNIA
Modifiers: **Material** 1.406
Labor 1.371
Equipment 1.083
Category: Feasibility Study
Report Option: Calendar Year
Description: The feasibility study consists of two alternatives. Alt 2 includes excavation, recycling of concrete ddebris, and off site disposal of remaining debris and waste and no longterm monitoring. Alt 3 includes recycling of concret debris, hot spot removal, off site disposal of surface debris and 5 years of water monitoring.

Site

Name: Alt 2 Excav and Backfill Unit 1 and 2
ID: IR Site 2 Units 1 & 2
Type: Excavate & Dispose of Soil Off Site
Description: Excavate 84,800 BCY and backfill to surroundig grade 141,390 BCY (162,600LCY). Dispose of 49,800 cy of surface debris. (Rev 3/2005)
Program: N/A

Estimator Information:

Name: R Stark
Title: Project Estimator
Agency/Org./Office: Bechtel National, Inc
Business Address: PO Box 193965

Cost Database Date: 2005
Cost Type: User-Defined
Print Date: 5/20/2005 2:52:39 PM

Phase Element Technology Cost Detail Report (without Markups)

San Fransisco, CA 94119-3965
Phone: 415-768-2465
Email: rstark@bechtel.com
Prepared Date: 03/28/2005

Reviewer Information:
Name:
Title:
Agency/Org./Office:
Business Address:
Phone:
Email:
Date Reviewed:

Phase Element

Name:	Haul debris off-site	**Media/Waste Type:**	Solids
Type:	Remedial Action	**Secondary Media/Waste Type:**	N/A
Labor Rate Group:	System Labor Rate	**Contaminant:**	None
Analysis Rate Group:	Navy Clean CTO 069 Rates	**Secondary Contaminant:**	None
Approach:	Ex Situ	**Markup Template:**	Navy Clean C (No SC Markup)1
Start Date:	1/1/2008	**O&M Markup Template:**	N/A
Description:	Haul 105,900 cy to Class II landfill (110 miles one way) and 4,000 cy to class 1 landfill 400 miles one way (Rev 3_05).		

Phase Element Technology Cost Detail Report (without Markups)

Technology: Load and Haul

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17020401	Dump Charges	118,620.00	CY	30.00	0.00	0.00	$3,558,600.00	☑
17030226	988, 7.0 CY, Wheel Loader	377.00	HR	0.00	55.11	169.19	$84,559.29	☐
17030289	32 CY, Semi Dump	23,724.00	HR	0.00	43.49	75.76	$2,828,897.21	☐
				Total Element Cost			**$6,472,056.50**	
				Total 1st Year Technology Cost			**$6,472,056.50**	

Phase Element Technology Cost Detail Report (without Markups)

Technology: Off-site Transportation and Waste Disposal

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33190102	Bulk Solid Hazardous Waste Loading Into Truck	4,000.00	CY	0.00	1.05	1.65	$10,792.40	☐
33190311	Commercial RCRA landfills, truck washout	200.00	EA	222.44	0.00	0.00	$44,488.66	☐
33197264	Commercial RCRA landfills, bulk waste, solid, less than 2,000 lb/CY	4,000.00	CY	175.00	0.00	0.00	$700,000.00	☑
				Total Element Cost			**$755,281.06**	
				Total 1st Year Technology Cost			**$755,281.06**	

Phase Element Technology Cost Detail Report (without Markups)

Technology: Professional Labor Management

Element: Professional Labor Percentage

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220138	Project Management Labor Cost	1.00	LS	0.00	72,273.38	0.00	$72,273.38	☑
33220139	Planning Documents Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220140	Construction Oversight Labor Cost	1.00	LS	0.00	144,546.80	0.00	$144,546.80	☑
33220141	Reporting Labor Cost	1.00	LS	0.00	18,068.34	0.00	$18,068.34	☑
33220142	As-Built Drawings Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220143	Public Notice Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220144	Site Closure Activities Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220145	Permitting Labor Cost	1.00	LS	0.00	90,341.72	0.00	$90,341.72	☑
33220146	Responsible Party Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220147	Reimbursement Claims Preparation Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220148	Other Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐

Total Element Cost	**$325,230.24**
Total 1st Year Technology Cost	**$325,230.24**
Total Phase Element Cost	**$7,552,567.80**

Phase Element Technology Cost Detail Report (without Markups)

Folder: CTO 024 Rev May_05

Project

Name: CTO 024 NAF El Centro, CA IR Site 2 FS
ID: Navy Clean CTO 024 (23818-024)
Location: EL CENTRO, CALIFORNIA
Modifiers: **Material** 1.406
Labor 1.371
Equipment 1.083
Category: Feasibility Study
Report Option: Calendar Year
Description: The feasibility study consists of two alternatives. Alt 2 includes excavation, recycling of concrete ddebris, and off site disposal of remaining debris and waste and no longterm monitoring. Alt 3 includes recycling of concret debris, hot spot removal, off site disposal of surface debris and 5 years of water monitoring.

Site

Name: Alt 2 Excav and Backfill Unit 1 and 2
ID: IR Site 2 Units 1 & 2
Type: Excavate & Dispose of Soil Off Site
Description: Excavate 84,800 BCY and backfill to surroundig grade 141,390 BCY (162,600LCY). Dispose of 49,800 cy of surface debris. (Rev 3/2005)
Program: N/A

Estimator Information:
Name: R Stark
Title: Project Estimator
Agency/Org./Office: Bechtel National, Inc
Business Address: PO Box 193965

Cost Database Date: 2005
Cost Type: User-Defined
Print Date: 5/20/2005 2:53:22 PM

Phase Element Technology Cost Detail Report (without Markups)

San Fransisco, CA 94119-3965
Phone: 415-768-2465
Email: rstark@bechtel.com
Prepared Date: 03/28/2005

Reviewer Information:
Name:
Title:
Agency/Org./Office:
Business Address:
Phone:
Email:
Date Reviewed:

Phase Element

Name:	Recycle Concrete Debris	**Media/Waste Type:**	N/A
Type:	Remedial Action	**Secondary Media/Waste Type:**	N/A
Labor Rate Group:	System Labor Rate	**Contaminant:**	None
Analysis Rate Group:	System Analysis Rate	**Secondary Contaminant:**	None
Approach:	Ex Situ	**Markup Template:**	Navy Clean C (No SC Markup)
Start Date:	1/1/2008	**O&M Markup Template:**	N/A

Description: Screen 67,000 cy of debris for concrete to be recycled and recyle 25,300 cy.

Phase Element Technology Cost Detail Report (without Markups)

Technology: RECYCLE CONCRETE

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
95011004	Crush Demolished Concrete no Reinf	25,300.00	CY	17.40	0.00	0.00	$440,220.00	☑
				Total Element Cost			**$440,220.00**	
				Total 1st Year Technology Cost			**$440,220.00**	

Phase Element Technology Cost Detail Report (without Markups)

Technology: Professional Labor Management

Element: Professional Labor Percentage

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220138	Project Management Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220139	Planning Documents Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220140	Construction Oversight Labor Cost	1.00	LS	0.00	4,402.20	0.00	$4,402.20	☑
33220141	Reporting Labor Cost	1.00	LS	0.00	1,100.55	0.00	$1,100.55	☑
33220142	As-Built Drawings Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220143	Public Notice Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220144	Site Closure Activities Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220145	Permitting Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220146	Responsible Party Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220147	Reimbursement Claims Preparation Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220148	Other Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐

Total Element Cost	**$5,502.75**
Total 1st Year Technology Cost	**$5,502.75**
Total Phase Element Cost	**$445,722.75**

Phase Element Technology Cost Detail Report (without Markups)

Folder: CTO 024 Rev May_05

Project

Name: CTO 024 NAF El Centro, CA IR Site 2 FS
ID: Navy Clean CTO 024 (23818-024)
Location: EL CENTRO, CALIFORNIA
Modifiers: **Material** 1.406
Labor 1.371
Equipment 1.083
Category: Feasibility Study
Report Option: Calendar Year
Description: The feasibility study consists of two alternatives. Alt 2 includes excavation, recycling of concrete ddebris, and off site disposal of remaining debris and waste and no longterm monitoring. Alt 3 includes recycling of concret debris, hot spot removal, off site disposal of surface debris and 5 years of water monitoring.

Site

Name: Alt 2 Excav and Backfill Unit 1 and 2
ID: IR Site 2 Units 1 & 2
Type: Excavate & Dispose of Soil Off Site
Description: Excavate 84,800 BCY and backfill to surroundig grade 141,390 BCY (162,600LCY). Dispose of 49,800 cy of surface debris. (Rev 3/2005)
Program: N/A

Estimator Information:
Name: R Stark
Title: Project Estimator
Agency/Org./Office: Bechtel National, Inc
Business Address: PO Box 193965

Cost Database Date: 2005
Cost Type: User-Defined
Print Date: 5/20/2005 2:54:18 PM

Phase Element Technology Cost Detail Report (without Markups)

San Fransisco, CA 94119-3965
Phone: 415-768-2465
Email: rstark@bechtel.com
Prepared Date: 03/28/2005

Reviewer Information:
Name:
Title:
Agency/Org./Office:
Business Address:
Phone:
Email:
Date Reviewed:

Phase Element

Name: Soil Confirmation
Type: Remedial Action
Labor Rate Group: System Labor Rate
Analysis Rate Group: Navy Clean CTO 024 Rates (Rev1)
Approach: Ex Situ
Start Date: 1/1/2008
Description: Soil confirmation following excavation for 31.7 Acres

Media/Waste Type: Solids
Secondary Media/Waste Type: N/A
Contaminant: None
Secondary Contaminant: None
Markup Template: Navy CleanB No Owner Cost
O&M Markup Template: N/A

Phase Element Technology Cost Detail Report (without Markups)

Technology: Site Inspection

Element: Planning

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220102	Project Manager	5.00	HR	0.00	62.59	0.00	$312.94	☐
33220109	Staff Scientist	16.00	HR	0.00	52.07	0.00	$833.11	☐
33240101	Other Direct Costs	1.00	LS	21.40	0.00	0.00	$21.40	☑
				Total Element Cost			**$1,167.44**	

Element: Sampling and Analysis

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33010104	Sample collection, vehicle mileage charge, car or van	430.00	MI	0.23	0.00	0.00	$96.75	☐
33010202	Sample collection, sampling personnel travel, per diem	4.00	DAY	86.00	0.00	0.00	$344.00	☑
33020401	Disposable Materials per Sample	72.00	EA	11.71	0.00	0.00	$843.25	☐
33020402	Decontamination Materials per Sample	72.00	EA	10.43	0.00	0.00	$751.14	☐
33020603	Surface Soil Sampling Equipment	1.00	EA	520.19	0.00	0.00	$520.19	☐
33021709	Testing, TAL metals (6010/7000s)	130.00	EA	209.00	0.00	0.00	$27,170.00	☑
33021717	Pesticides/PCBs (SW 3550B/SW 8081/8082), Soil Analysis	87.00	EA	182.00	0.00	0.00	$15,834.00	☑

Phase Element Technology Cost Detail Report (without Markups)

Element: Sampling and Analysis

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33021740	Testing, dioxins & dibenzofurans (8280)	44.00	EA	1,003.00	0.00	0.00	$44,132.00	☑
33029533	SVOC's (EPA8270C) (7.3)	87.00	LS	274.00	0.00	0.00	$23,838.00	☑
33220112	Field Technician	32.00	HR	0.00	38.79	0.00	$1,241.32	☐
				Total Element Cost			**$114,770.66**	
				Total 1st Year Technology Cost			**$115,938.10**	

Phase Element Technology Cost Detail Report (without Markups)

Technology: Professional Labor Management

Element: Professional Labor Percentage

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220138	Project Management Labor Cost	1.00	LS	0.00	4,347.68	0.00	$4,347.68	☑
33220139	Planning Documents Labor Cost	1.00	LS	0.00	4,057.83	0.00	$4,057.83	☑
33220140	Construction Oversight Labor Cost	1.00	LS	0.00	3,478.14	0.00	$3,478.14	☑
33220141	Reporting Labor Cost	1.00	LS	0.00	579.69	0.00	$579.69	☑
33220142	As-Built Drawings Labor Cost	1.00	LS	0.00	579.69	0.00	$579.69	☑
33220144	Site Closure Activities Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220146	Responsible Party Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220147	Reimbursement Claims Preparation Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220148	Other Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐

Total Element Cost	**$13,043.04**
Total 1st Year Technology Cost	**$13,043.04**
Total Phase Element Cost	**$128,981.14**

Phase Element Technology Cost Detail Report (without Markups)

Folder: CTO 024 Rev May_05

Project

Name: CTO 024 NAF El Centro, CA IR Site 2 FS
ID: Navy Clean CTO 024 (23818-024)
Location: EL CENTRO, CALIFORNIA
Modifiers: **Material** 1.406
Labor 1.371
Equipment 1.083
Category: Feasibility Study
Report Option: Calendar Year
Description: The feasibility study consists of two alternatives. Alt 2 includes excavation, recycling of concrete ddebris, and off site disposal of remaining debris and waste and no longterm monitoring. Alt 3 includes recycling of concret debris, hot spot removal, off site disposal of surface debris and 5 years of water monitoring.

Site

Name: Alt 2 Excav and Backfill Unit 1 and 2
ID: IR Site 2 Units 1 & 2
Type: Excavate & Dispose of Soil Off Site
Description: Excavate 84,800 BCY and backfill to surroundig grade 141,390 BCY (162,600LCY). Dispose of 49,800 cy of surface debris. (Rev 3/2005)
Program: N/A

Estimator Information:
Name: R Stark
Title: Project Estimator
Agency/Org./Office: Bechtel National, Inc
Business Address: PO Box 193965

Cost Database Date: 2005
Cost Type: User-Defined
Print Date: 5/20/2005 2:54:55 PM

Phase Element Technology Cost Detail Report (without Markups)

San Fransisco, CA 94119-3965
Phone: 415-768-2465
Email: rstark@bechtel.com
Prepared Date: 03/28/2005

Reviewer Information:
Name:
Title:
Agency/Org./Office:
Business Address:
Phone:
Email:
Date Reviewed:

Phase Element

Name:	Waste Profiling	**Media/Waste Type:**	Solids
Type:	Remedial Action	**Secondary Media/Waste Type:**	N/A
Labor Rate Group:	System Labor Rate	**Contaminant:**	None
Analysis Rate Group:	Navy Clean CTO 024 Rates (Rev1)	**Secondary Contaminant:**	None
Approach:	Ex Situ	**Markup Template:**	Navy CleanB No Owner Cost
Start Date:	1/1/2008	**O&M Markup Template:**	N/A

Description: Waste profiling (1 sample/500 cy) during excavation and debris removal of 108,700 cy

Phase Element Technology Cost Detail Report (without Markups)

Technology: Site Inspection

Element: Planning

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220102	Project Manager	5.00	HR	0.00	62.59	0.00	$312.94	☐
33220109	Staff Scientist	16.00	HR	0.00	52.07	0.00	$833.11	☐
33240101	Other Direct Costs	1.00	LS	21.40	0.00	0.00	$21.40	☑
				Total Element Cost			**$1,167.44**	

Element: Sampling and Analysis

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33020401	Disposable Materials per Sample	260.00	EA	11.71	0.00	0.00	$3,045.07	☐
33020402	Decontamination Materials per Sample	260.00	EA	10.43	0.00	0.00	$2,712.45	☐
33020603	Surface Soil Sampling Equipment	12.00	EA	520.19	0.00	0.00	$6,242.30	☐
33021709	Testing, TAL metals (6010/7000s)	260.00	EA	209.00	0.00	0.00	$54,340.00	☑
33021717	Pesticides/PCBs (SW 3550B/SW 8081/8082), Soil Analysis	260.00	EA	182.00	0.00	0.00	$47,320.00	☑
33021740	Testing, dioxins & dibenzofurans (8280)	110.00	EA	1,003.00	0.00	0.00	$110,330.00	☑
33029522	Pesticides/PCB's EPA 8081A/8082 (3.3)	260.00	LS	236.00	0.00	0.00	$61,360.00	☑

Phase Element Technology Cost Detail Report (without Markups)

Element: Sampling and Analysis

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33029529	VOC's (EPA 8260B) (6.5)	260.00	LS	165.00	0.00	0.00	$42,900.00	☑
33029533	SVOC's (EPA8270C) (7.3)	260.00	LS	274.00	0.00	0.00	$71,240.00	☑
33029535	TCLP Metals	260.00	LS	161.00	0.00	0.00	$41,860.00	☑
33029540	TCLP VOC	260.00	LS	242.00	0.00	0.00	$62,920.00	☑
33029541	TCLP SVOC's	260.00	LS	332.00	0.00	0.00	$86,320.00	☑
33220112	Field Technician	868.00	HR	0.00	38.79	0.00	$33,670.94	☐
				Total Element Cost			**$624,260.76**	
				Total 1st Year Technology Cost			**$625,428.20**	

Cost Database Date: 2005

Cost Type: User-Defined

Print Date: 5/20/2005 2:54:55 PM

Phase Element Technology Cost Detail Report (without Markups)

Technology: Professional Labor Management

Element: Professional Labor Percentage

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220138	Project Management Labor Cost	1.00	LS	0.00	15,635.71	0.00	$15,635.71	☑
33220139	Planning Documents Labor Cost	1.00	LS	0.00	15,635.71	0.00	$15,635.71	☑
33220140	Construction Oversight Labor Cost	1.00	LS	0.00	17,199.28	0.00	$17,199.28	☑
33220141	Reporting Labor Cost	1.00	LS	0.00	2,189.00	0.00	$2,189.00	☑
33220142	As-Built Drawings Labor Cost	1.00	LS	0.00	2,189.00	0.00	$2,189.00	☑
33220143	Public Notice Labor Cost	1.00	LS	0.00	469.07	0.00	$469.07	☑
33220144	Site Closure Activities Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220145	Permitting Labor Cost	1.00	LS	0.00	13,759.42	0.00	$13,759.42	☑
33220146	Responsible Party Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220147	Reimbursement Claims Preparation Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220148	Other Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐

Total Element Cost	**$67,077.19**
Total 1st Year Technology Cost	**$67,077.19**
Total Phase Element Cost	**$692,505.39**

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ATTACHMENT C

SITE COST DETAIL REPORT FOR ALTERNATIVE 3

Site Cost Detail Report
(with Markups)

Folder: CTO 024 Rev May_05

Project

Name: CTO 024 NAF El Centro, CA IR Site 2 FS
ID: Navy Clean CTO 024 (23818-024)
Location: EL CENTRO, CALIFORNIA
Modifiers: **Material** 1.406
Labor 1.371
Equipment 1.083
Category: Feasibility Study
Report Option: Calendar Year
Description: The feasibility study consists of two alternatives. Alt 2 includes excavation, recycling of concrete ddebris, and off site disposal of remaining debris and waste and no longterm monitoring. Alt 3 includes recycling of concret debris, hot spot removal, off site disposal of surface debris and 5 years of water monitoring.

Site

Name: Alt 3 Hot Spot Removal \Off site Removal
ID: IR 2
Type: Contaminated Soil Removal
Description: Recycle concrete debris, hot spot removal Unit 1 and off site dispoasal of surface debris. (Rev 3/2005)
Program: N/A

Estimator Information:

Name: R Stark
Title: Project Estimator
Agency/Org./Office: Bechtel National, Inc
Business Address: PO Box 193965
San Fransisco, CA 94119-3965
Phone: 415-768-2465

Site Cost Detail Report
(with Markups)

Email: rstark@bechtel.com
Prepared Date: 03/30/2005

Reviewer Information:
Name:
Title:
Agency/Org./Office:
Business Address:
Phone:
Email:
Date Reviewed:

Phase Element (Markup Template)	Direct Cost	General Conditions	Overhead	Sub Profit	Prime Markup on Sub	Prime Profit	Risk	Owner Cost	Markup Total	Total
Remedial Design	$130,278								$192,832	$323,110
(Navy CleanB No Owner		$6,536	$160,985	$0	$0	$25,311	$0	$0		
Asphalt Cover	$767,684								$277,722	$1,045,406
(Navy Clean C (No SC		$42,273	$153,551	$0	$0	$81,898	$0	$0		
Backfill Unit 1 Borrow Pit	$444,846								$97,721	$542,567
(Navy Clean C (No SC		$5,495	$30,354	$4,271	$15,096	$42,505	$0	$0		
Consolidate Unit 1 Debris and Excav Mat'	$14,772								$10,843	$25,615
(Navy CleanB No Owner		$3,397	$5,438	$0	$0	$2,007	$0	$0		
Decon Facility	$60,810								$24,635	$85,445
(Navy CleanB No Owner		$6,887	$11,054	$0	$0	$6,694	$0	$0		

Site Cost Detail Report
(with Markups)

Phase Element (Markup Template)	Direct Cost	General Conditions	Overhead	Sub Profit	Prime Markup on Sub	Prime Profit	Risk	Owner Cost	Markup Total	Total
Demo Monitoring Wells	$5,600								$3,044	$8,644
(Navy CleanB No Owner		$1,699	$668	$0	$0	$677	$0	$0		
Haul debris off-site	$2,498,533								$457,037	$2,955,570
(Navy Clean C (No SC		$27,423	$85,316	$24,863	$87,892	$231,542	$0	$0		
Monitoring Wells	$9,788								$8,317	$18,105
(Navy CleanB No Owner		$2,870	$4,028	$0	$0	$1,418	$0	$0		
Recycle Concrete Debris	$252,552								$43,607	$296,159
(Navy Clean C (No SC		$2,675	$6,221	$2,538	$8,972	$23,201	$0	$0		
Soil Confirmation	$39,092								$20,018	$59,110
(Navy CleanB No Owner		$3,886	$11,519	$0	$0	$4,612	$0	$0		
Soil Stabilization Stone Columns and 3'	$1,047,905								$166,777	$1,214,682
(Navy Clean C (No SC		$8,961	$65,532	$6,103	$21,575	$64,606	$0	$0		
Waste Profiling	$171,670								$76,635	$248,305
(Navy CleanB No Owner		$10,712	$46,502	$0	$0	$19,421	$0	$0		
Monitoring 5 Year	$83,444								$75,975	$159,419
(Navy CleanB No Owner		$10,761	$53,027	$0	$0	$12,186	$0	$0		

Site Cost Detail Report
(with Markups)

Total Site Cost	$5,526,976	$133,574	$634,196	$37,775	$133,535	$516,080	$0	$0	$1,455,160	$6,982,136

Phase Element Technology Cost Detail Report (without Markups)

Folder: CTO 024 Rev May_05

Project

Name: CTO 024 NAF El Centro, CA IR Site 2 FS
ID: Navy Clean CTO 024 (23818-024)
Location: EL CENTRO, CALIFORNIA
Modifiers: **Material** 1.406
Labor 1.371
Equipment 1.083
Category: Feasibility Study
Report Option: Calendar Year
Description: The feasibility study consists of two alternatives. Alt 2 includes excavation, recycling of concrete ddebris, and off site disposal of remaining debris and waste and no longterm monitoring. Alt 3 includes recycling of concret debris, hot spot removal, off site disposal of surface debris and 5 years of water monitoring.

Site

Name: Alt 3 Hot Spot Removal \Off site Removal of Debris
ID: IR 2
Type: Contaminated Soil Removal
Description: Recycle concrete debris, hot spot removal Unit 1 and off site dispoasal of surface debris. (Rev 3/2005)
Program: N/A

Estimator Information:

Name: R Stark
Title: Project Estimator
Agency/Org./Office: Bechtel National, Inc
Business Address: PO Box 193965
San Fransisco, CA 94119-3965

Cost Database Date: 2005
Cost Type: User-Defined
Print Date: 5/20/2005 3:36:01 PM

Phase Element Technology Cost Detail Report (without Markups)

Phone: 415-768-2465
Email: rstark@bechtel.com
Prepared Date: 03/30/2005

Reviewer Information:
Name:
Title:
Agency/Org./Office:
Business Address:
Phone:
Email:
Date Reviewed:

Phase Element

Name:	Remedial Design	**Media/Waste Type:**	Solids
Type:	Design	**Secondary Media/Waste Type:**	N/A
Labor Rate Group:	System Labor Rate	**Contaminant:**	None
Analysis Rate Group:	System Analysis Rate	**Secondary Contaminant:**	None
Approach:	None	**Markup Template:**	Navy CleanB No Owner Cost
Start Date:	1/1/2008	**O&M Markup Template:**	N/A
Description:	Design for excavation, soil stabilization (stone Columns) and AC cap		

Phase Element Technology Cost Detail Report (without Markups)

Technology: Remedial Design

Element: Project Planning

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33010104	Sample collection, vehicle mileage charge, car or van	110.00	MI	0.23	0.00	0.00	$24.75	☐
33220102	Project Manager	43.00	HR	0.00	51.32	0.00	$2,206.84	☐
33220103	Office Manager	22.00	HR	0.00	56.83	0.00	$1,250.28	☐
33220105	Project Engineer	19.00	HR	0.00	49.77	0.00	$945.59	☐
33220106	Staff Engineer	57.00	HR	0.00	43.55	0.00	$2,482.46	☐
33220109	Staff Scientist	221.00	HR	0.00	42.70	0.00	$9,435.99	☐
33220110	QA/QC Officer	40.00	HR	0.00	41.97	0.00	$1,679.00	☐
33220111	Certified Industrial Hygienist	21.00	HR	0.00	53.26	0.00	$1,118.50	☐
33220112	Field Technician	26.00	HR	0.00	31.81	0.00	$827.03	☐
33220113	Secretarial/ Administrative	22.00	HR	0.00	25.54	0.00	$561.94	☐
33220114	Word Processing/Clerical	37.00	HR	0.00	22.16	0.00	$819.87	☐
33220115	Draftsman/CADD	18.00	HR	0.00	28.97	0.00	$521.43	☐
33240101	Other Direct Costs	1.00	LS	371.43	0.00	0.00	$371.43	☑
				Total Element Cost			**$22,245.12**	

Phase Element Technology Cost Detail Report (without Markups)

Element: Preliminary Design

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220102	Project Manager	20.00	HR	0.00	51.32	0.00	$1,026.44	☐
33220103	Office Manager	7.00	HR	0.00	56.83	0.00	$397.82	☐
33220105	Project Engineer	56.00	HR	0.00	49.77	0.00	$2,787.00	☐
33220106	Staff Engineer	136.00	HR	0.00	43.55	0.00	$5,923.06	☐
33220109	Staff Scientist	22.00	HR	0.00	42.70	0.00	$939.33	☐
33220110	QA/QC Officer	39.00	HR	0.00	41.97	0.00	$1,637.02	☐
33220113	Secretarial/ Administrative	29.00	HR	0.00	25.54	0.00	$740.74	☐
33220114	Word Processing/Clerical	57.00	HR	0.00	22.16	0.00	$1,263.05	☐
33220115	Draftsman/CADD	46.00	HR	0.00	28.97	0.00	$1,332.54	☐
33240101	Other Direct Costs	1.00	LS	136.40	0.00	0.00	$136.40	☑
				Total Element Cost			**$16,183.39**	

Element: Intermediate Design

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220102	Project Manager	26.00	HR	0.00	51.32	0.00	$1,334.37	☐
33220103	Office Manager	22.00	HR	0.00	56.83	0.00	$1,250.28	☐
33220105	Project Engineer	60.00	HR	0.00	49.77	0.00	$2,986.07	☐
33220106	Staff Engineer	128.00	HR	0.00	43.55	0.00	$5,574.64	☐

Phase Element Technology Cost Detail Report (without Markups)

Element: Intermediate Design

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220109	Staff Scientist	149.00	HR	0.00	42.70	0.00	$6,361.82	☐
33220110	QA/QC Officer	43.00	HR	0.00	41.97	0.00	$1,804.92	☐
33220111	Certified Industrial Hygienist	16.00	HR	0.00	53.26	0.00	$852.19	☐
33220113	Secretarial/ Administrative	21.00	HR	0.00	25.54	0.00	$536.40	☐
33220114	Word Processing/Clerical	43.00	HR	0.00	22.16	0.00	$952.82	☐
33220115	Draftsman/CADD	68.00	HR	0.00	28.97	0.00	$1,969.84	☐
33240101	Other Direct Costs	1.00	LS	200.80	0.00	0.00	$200.80	☑
				Total Element Cost			**$23,824.17**	

Element: Prefinal Design

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220102	Project Manager	22.00	HR	0.00	51.32	0.00	$1,129.08	☐
33220103	Office Manager	13.00	HR	0.00	56.83	0.00	$738.80	☐
33220105	Project Engineer	64.00	HR	0.00	49.77	0.00	$3,185.15	☐
33220106	Staff Engineer	192.00	HR	0.00	43.55	0.00	$8,361.96	☐
33220109	Staff Scientist	166.00	HR	0.00	42.70	0.00	$7,087.67	☐
33220110	QA/QC Officer	77.00	HR	0.00	41.97	0.00	$3,232.07	☐
33220111	Certified Industrial Hygienist	30.00	HR	0.00	53.26	0.00	$1,597.86	☐

Phase Element Technology Cost Detail Report (without Markups)

Element: Prefinal Design

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220113	Secretarial/ Administrative	30.00	HR	0.00	25.54	0.00	$766.28	☐
33220114	Word Processing/Clerical	60.00	HR	0.00	22.16	0.00	$1,329.52	☐
33220115	Draftsman/CADD	111.00	HR	0.00	28.97	0.00	$3,215.48	☐
33240101	Other Direct Costs	1.00	LS	390.71	0.00	0.00	$390.71	☑
				Total Element Cost			**$31,034.59**	

Element: Final Design

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220102	Project Manager	26.00	HR	0.00	51.32	0.00	$1,334.37	☐
33220103	Office Manager	17.00	HR	0.00	56.83	0.00	$966.13	☐
33220105	Project Engineer	85.00	HR	0.00	49.77	0.00	$4,230.27	☐
33220106	Staff Engineer	213.00	HR	0.00	43.55	0.00	$9,276.55	☐
33220109	Staff Scientist	162.00	HR	0.00	42.70	0.00	$6,916.88	☐
33220110	QA/QC Officer	85.00	HR	0.00	41.97	0.00	$3,567.87	☐
33220111	Certified Industrial Hygienist	34.00	HR	0.00	53.26	0.00	$1,810.91	☐
33220113	Secretarial/ Administrative	34.00	HR	0.00	25.54	0.00	$868.46	☐
33220114	Word Processing/Clerical	68.00	HR	0.00	22.16	0.00	$1,506.79	☐
33220115	Draftsman/CADD	119.00	HR	0.00	28.97	0.00	$3,447.23	☐

Phase Element Technology Cost Detail Report (without Markups)

Element: Final Design

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33240101	Other Direct Costs	1.00	LS	432.55	0.00	0.00	$432.55	☑
				Total Element Cost			**$34,358.01**	

Element: Bid Documents

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220102	Project Manager	6.00	HR	0.00	51.32	0.00	$307.93	☐
33220103	Office Manager	10.00	HR	0.00	56.83	0.00	$568.31	☐
33220105	Project Engineer	6.00	HR	0.00	49.77	0.00	$298.61	☐
33220106	Staff Engineer	6.00	HR	0.00	43.55	0.00	$261.31	☐
33220109	Staff Scientist	3.00	HR	0.00	42.70	0.00	$128.09	☐
33220110	QA/QC Officer	5.00	HR	0.00	41.97	0.00	$209.87	☐
33220111	Certified Industrial Hygienist	2.00	HR	0.00	53.26	0.00	$106.52	☐
33220113	Secretarial/ Administrative	16.00	HR	0.00	25.54	0.00	$408.68	☐
33220114	Word Processing/Clerical	14.00	HR	0.00	22.16	0.00	$310.22	☐
33240101	Other Direct Costs	1.00	LS	33.14	0.00	0.00	$33.14	☑
				Total Element Cost			**$2,632.70**	
				Total 1st Year Technology Cost			**$130,277.99**	

Phase Element Technology Cost Detail Report (without Markups)

Total Phase Element Cost	**$130,277.99**

Phase Element Technology Cost Detail Report (without Markups)

Folder: CTO 024 Rev May_05

Project

Name: CTO 024 NAF El Centro, CA IR Site 2 FS
ID: Navy Clean CTO 024 (23818-024)
Location: EL CENTRO, CALIFORNIA
Modifiers: **Material** 1.406
Labor 1.371
Equipment 1.083
Category: Feasibility Study
Report Option: Calendar Year
Description: The feasibility study consists of two alternatives. Alt 2 includes excavation, recycling of concrete ddebris, and off site disposal of remaining debris and waste and no longterm monitoring. Alt 3 includes recycling of concret debris, hot spot removal, off site disposal of surface debris and 5 years of water monitoring.

Site

Name: Alt 3 Hot Spot Removal \Off site Removal of Debris
ID: IR 2
Type: Contaminated Soil Removal
Description: Recycle concrete debris, hot spot removal Unit 1 and off site dispoasal of surface debris. (Rev 3/2005)
Program: N/A

Estimator Information:

Name: R Stark
Title: Project Estimator
Agency/Org./Office: Bechtel National, Inc
Business Address: PO Box 193965
San Fransisco, CA 94119-3965

Cost Database Date: 2005
Cost Type: User-Defined
Print Date: 5/20/2005 3:36:42 PM

Phase Element Technology Cost Detail Report (without Markups)

Phone: 415-768-2465
Email: rstark@bechtel.com

Prepared Date: 03/30/2005

Reviewer Information:
Name:
Title:
Agency/Org./Office:
Business Address:
Phone:
Email:
Date Reviewed:

Phase Element

Name:	Asphalt Cover	**Media/Waste Type:**	Soil
Type:	Remedial Action	**Secondary Media/Waste Type:**	N/A
Labor Rate Group:	System Labor Rate	**Contaminant:**	None
Analysis Rate Group:	System Analysis Rate	**Secondary Contaminant:**	None
Approach:	Ex Situ	**Markup Template:**	Navy Clean C (No SC Markup)
Start Date:	1/1/2008	**O&M Markup Template:**	N/A

Description: Construct a 6 inch thick asphalt cap with 4 " base at Unit 2 -7.07 acre (308,100 SF). Base materil recycled concrete.

Phase Element Technology Cost Detail Report (without Markups)

Technology: Parking Lots

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030102	Rough Grading, 12G, 1 Pass	37,656.67	SY	0.00	0.29	0.51	$30,377.64	☐
17030107	Fine Grading, 120G, 2 Passes	37,656.67	SY	0.00	0.12	0.14	$9,918.77	☐
17030510	Dry Roll Gravel, Steel Roller	34,250.00	SY	0.00	0.67	0.28	$32,743.00	☐
18010102	Gravel, Delivered & Dumped	3,805.56	CY	0.00	2.89	1.73	$17,564.18	☑
18010310	Prime Coat	34,250.00	SY	0.42	0.04	0.01	$15,878.30	☐
18010312	Asphalt Wearing Course, 1 Pass (Line Item Includes 5% Waste)	11,174.06	TON	43.54	7.04	2.41	$592,047.49	☐
				Total Element Cost			**$698,529.38**	
				Total 1st Year Technology Cost			**$698,529.38**	

Phase Element Technology Cost Detail Report (without Markups)

Technology: Professional Labor Management

Element: Professional Labor Percentage

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220138	Project Management Labor Cost	1.00	LS	0.00	13,970.59	0.00	$13,970.59	☑
33220139	Planning Documents Labor Cost	1.00	LS	0.00	13,970.59	0.00	$13,970.59	☑
33220140	Construction Oversight Labor Cost	1.00	LS	0.00	17,463.23	0.00	$17,463.23	☑
33220141	Reporting Labor Cost	1.00	LS	0.00	1,746.32	0.00	$1,746.32	☑
33220142	As-Built Drawings Labor Cost	1.00	LS	0.00	1,746.32	0.00	$1,746.32	☑
33220143	Public Notice Labor Cost	1.00	LS	0.00	2,794.12	0.00	$2,794.12	☑
33220144	Site Closure Activities Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220145	Permitting Labor Cost	1.00	LS	0.00	17,463.23	0.00	$17,463.23	☑
33220146	Responsible Party Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220147	Reimbursement Claims Preparation Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220148	Other Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐

Total Element Cost	**$69,154.40**
Total 1st Year Technology Cost	**$69,154.40**
Total Phase Element Cost	**$767,683.78**

Phase Element Technology Cost Detail Report (without Markups)

Folder: CTO 024 Rev May_05

Project

Name: CTO 024 NAF El Centro, CA IR Site 2 FS
ID: Navy Clean CTO 024 (23818-024)
Location: EL CENTRO, CALIFORNIA
Modifiers: **Material** 1.406
Labor 1.371
Equipment 1.083
Category: Feasibility Study
Report Option: Calendar Year
Description: The feasibility study consists of two alternatives. Alt 2 includes excavation, recycling of concrete ddebris, and off site disposal of remaining debris and waste and no longterm monitoring. Alt 3 includes recycling of concret debris, hot spot removal, off site disposal of surface debris and 5 years of water monitoring.

Site

Name: Alt 3 Hot Spot Removal \Off site Removal of Debris
ID: IR 2
Type: Contaminated Soil Removal
Description: Recycle concrete debris, hot spot removal Unit 1 and off site dispoasal of surface debris. (Rev 3/2005)
Program: N/A

Estimator Information:

Name: R Stark
Title: Project Estimator
Agency/Org./Office: Bechtel National, Inc
Business Address: PO Box 193965
San Fransisco, CA 94119-3965

Cost Database Date: 2005
Cost Type: User-Defined
Print Date: 5/20/2005 3:37:37 PM

Phase Element Technology Cost Detail Report (without Markups)

Phone: 415-768-2465
Email: rstark@bechtel.com

Prepared Date: 03/30/2005

Reviewer Information:
Name:
Title:
Agency/Org./Office:
Business Address:
Phone:
Email:
Date Reviewed:

Phase Element

Name:	Backfill Unit 1 Borrow Pit	**Media/Waste Type:**	Soil
Type:	Remedial Action	**Secondary Media/Waste Type:**	N/A
Labor Rate Group:	System Labor Rate	**Contaminant:**	None
Analysis Rate Group:	System Analysis Rate	**Secondary Contaminant:**	None
Approach:	Ex Situ	**Markup Template:**	Navy Clean C (No SC Markup)
Start Date:	1/1/2008	**O&M Markup Template:**	N/A

Description: Backfill borrow pits to surrounding w/ onsite material (53,700bcy). Add an additional foot of cover for the 13.76 acre area (599,600 sf; 25,530 LCY)

Phase Element Technology Cost Detail Report (without Markups)

Technology: Excavation

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030422	Unclassified Fill, 6" Lifts, On-Site, Includes Spreading and Compaction	61,760.00	CY	0.00	1.25	2.00	$200,720.00	☑
33170803	Spray washing, decontaminate heavy equipment, decontaminate heavy equipment	1.00	EA	0.00	466.85	0.00	$466.85	☐
				Total Element Cost			**$201,186.85**	
				Total 1st Year Technology Cost			**$201,186.85**	

Phase Element Technology Cost Detail Report (without Markups)

Technology: Professional Labor Management

Element: Professional Labor Percentage

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220138	Project Management Labor Cost	1.00	LS	0.00	4,186.79	0.00	$4,186.79	☑
33220139	Planning Documents Labor Cost	1.00	LS	0.00	4,186.79	0.00	$4,186.79	☑
33220140	Construction Oversight Labor Cost	1.00	LS	0.00	11,513.66	0.00	$11,513.66	☑
33220141	Reporting Labor Cost	1.00	LS	0.00	1,465.38	0.00	$1,465.38	☑
33220142	As-Built Drawings Labor Cost	1.00	LS	0.00	1,465.38	0.00	$1,465.38	☑
33220143	Public Notice Labor Cost	1.00	LS	0.00	3,349.43	0.00	$3,349.43	☑
33220144	Site Closure Activities Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220145	Permitting Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220146	Responsible Party Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220147	Reimbursement Claims Preparation Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220148	Other Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
				Total Element Cost			**$26,167.41**	
				Total 1st Year Technology Cost			**$26,167.41**	

Phase Element Technology Cost Detail Report (without Markups)

Technology: Excavation

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030415	Backfill with Excavated Material	25,525.40	CY	0.30	7.58	0.64	$217,491.73	☐
					Total Element Cost		**$217,491.73**	
					Total 1st Year Technology Cost		**$217,491.73**	
					Total Phase Element Cost		**$444,845.99**	

Cost Database Date: 2005

Cost Type: User-Defined

Print Date: 5/20/2005 3:37:37 PM

Phase Element Technology Cost Detail Report (without Markups)

Folder: CTO 024 Rev May_05

Project

Name: CTO 024 NAF El Centro, CA IR Site 2 FS
ID: Navy Clean CTO 024 (23818-024)
Location: EL CENTRO, CALIFORNIA
Modifiers: **Material** 1.406
Labor 1.371
Equipment 1.083
Category: Feasibility Study
Report Option: Calendar Year
Description: The feasibility study consists of two alternatives. Alt 2 includes excavation, recycling of concrete ddebris, and off site disposal of remaining debris and waste and no longterm monitoring. Alt 3 includes recycling of concret debris, hot spot removal, off site disposal of surface debris and 5 years of water monitoring.

Site

Name: Alt 3 Hot Spot Removal \Off site Removal of Debris
ID: IR 2
Type: Contaminated Soil Removal
Description: Recycle concrete debris, hot spot removal Unit 1 and off site dispoasal of surface debris. (Rev 3/2005)
Program: N/A

Estimator Information:

Name: R Stark
Title: Project Estimator
Agency/Org./Office: Bechtel National, Inc
Business Address: PO Box 193965
San Fransisco, CA 94119-3965

Cost Database Date: 2005
Cost Type: User-Defined
Print Date: 5/20/2005 3:38:11 PM

Phase Element Technology Cost Detail Report (without Markups)

Phone: 415-768-2465
Email: rstark@bechtel.com

Prepared Date: 03/30/2005

Reviewer Information:
Name:
Title:
Agency/Org./Office:
Business Address:
Phone:
Email:
Date Reviewed:

Phase Element

Name:	Consolidate Unit 1 Debris and Excav Mat'l	**Media/Waste Type:**	Solids
Type:	Remedial Action	**Secondary Media/Waste Type:**	N/A
Labor Rate Group:	System Labor Rate	**Contaminant:**	None
Analysis Rate Group:	System Analysis Rate	**Secondary Contaminant:**	None
Approach:	Ex Situ	**Markup Template:**	Navy CleanB No Owner Cost
Start Date:	1/1/2008	**O&M Markup Template:**	N/A

Description: Relocate debris north side of pit (6,040cy) and excavate and relocate 30 cy from Unit 1 hot spot. Partial consilidation of surface debris with landfill waste at north end of Unit 2 landfill ravine (2,200CY).

Phase Element Technology Cost Detail Report (without Markups)

Technology: Excavation

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030278	Excavate and load, bank measure, medium material, 3-1/2 C.Y. bucket, hydraulic excavator	6,045.04	BCY	0.00	0.78	0.73	$9,084.49	☐
				Total Element Cost			**$9,084.49**	
				Total 1st Year Technology Cost			**$9,084.49**	

Phase Element Technology Cost Detail Report (without Markups)

Technology: Professional Labor Management

Element: Professional Labor Percentage

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220138	Project Management Labor Cost	1.00	LS	0.00	620.69	0.00	$620.69	☑
33220139	Planning Documents Labor Cost	1.00	LS	0.00	496.55	0.00	$496.55	☑
33220140	Construction Oversight Labor Cost	1.00	LS	0.00	403.45	0.00	$403.45	☑
33220141	Reporting Labor Cost	1.00	LS	0.00	93.10	0.00	$93.10	☑
33220142	As-Built Drawings Labor Cost	1.00	LS	0.00	93.10	0.00	$93.10	☑
33220143	Public Notice Labor Cost	1.00	LS	0.00	31.03	0.00	$31.03	☑
33220144	Site Closure Activities Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220145	Permitting Labor Cost	1.00	LS	0.00	620.69	0.00	$620.69	☑
33220146	Responsible Party Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220147	Reimbursement Claims Preparation Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220148	Other Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
				Total Element Cost			**$2,358.61**	
				Total 1st Year Technology Cost			**$2,358.61**	

Phase Element Technology Cost Detail Report (without Markups)

Technology: Excavation

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030277	Excavate and load, bank measure, medium material, 2 C.Y. bucket, hydraulic excavator	2,187.00	BCY	0.00	0.97	0.55	$3,329.27	☐

Total Element Cost	**$3,329.27**
Total 1st Year Technology Cost	**$3,329.27**
Total Phase Element Cost	**$14,772.37**

Phase Element Technology Cost Detail Report (without Markups)

Folder: CTO 024 Rev May_05

Project

Name: CTO 024 NAF El Centro, CA IR Site 2 FS
ID: Navy Clean CTO 024 (23818-024)
Location: EL CENTRO, CALIFORNIA
Modifiers: **Material** 1.406
Labor 1.371
Equipment 1.083
Category: Feasibility Study
Report Option: Calendar Year
Description: The feasibility study consists of two alternatives. Alt 2 includes excavation, recycling of concrete ddebris, and off site disposal of remaining debris and waste and no longterm monitoring. Alt 3 includes recycling of concret debris, hot spot removal, off site disposal of surface debris and 5 years of water monitoring.

Site

Name: Alt 3 Hot Spot Removal \Off site Removal of Debris
ID: IR 2
Type: Contaminated Soil Removal
Description: Recycle concrete debris, hot spot removal Unit 1 and off site dispoasal of surface debris. (Rev 3/2005)
Program: N/A

Estimator Information:

Name: R Stark
Title: Project Estimator
Agency/Org./Office: Bechtel National, Inc
Business Address: PO Box 193965
San Fransisco, CA 94119-3965

Cost Database Date: 2005
Cost Type: User-Defined
Print Date: 5/20/2005 3:38:47 PM

Phase Element Technology Cost Detail Report (without Markups)

Phone: 415-768-2465
Email: rstark@bechtel.com

Prepared Date: 03/30/2005

Reviewer Information:
Name:
Title:
Agency/Org./Office:
Business Address:
Phone:
Email:
Date Reviewed:

Phase Element

Name: Demo Monitoring Wells
Type: Remedial Action
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate
Approach: Ex Situ
Start Date: 1/1/2008
Description: Demo 9-2" dia x 25' wells and 2" dia x 50' wells

Media/Waste Type: N/A
Secondary Media/Waste Type: N/A
Contaminant: None
Secondary Contaminant: None
Markup Template: Navy CleanB No Owner Cost
O&M Markup Template: N/A

Phase Element Technology Cost Detail Report (without Markups)

Technology: DEMO MONITORING WELLS

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
95011201	Allowance	1.00	LS	1,700.00	1,000.00	2,900.00	$5,600.00	☑
				Total Element Cost			**$5,600.00**	
				Total 1st Year Technology Cost			**$5,600.00**	
				Total Phase Element Cost			**$5,600.00**	

Phase Element Technology Cost Detail Report (without Markups)

Folder: CTO 024 Rev May_05

Project

Name: CTO 024 NAF El Centro, CA IR Site 2 FS
ID: Navy Clean CTO 024 (23818-024)
Location: EL CENTRO, CALIFORNIA
Modifiers: **Material** 1.406
Labor 1.371
Equipment 1.083
Category: Feasibility Study
Report Option: Calendar Year
Description: The feasibility study consists of two alternatives. Alt 2 includes excavation, recycling of concrete ddebris, and off site disposal of remaining debris and waste and no longterm monitoring. Alt 3 includes recycling of concret debris, hot spot removal, off site disposal of surface debris and 5 years of water monitoring.

Site

Name: Alt 3 Hot Spot Removal \Off site Removal of Debris
ID: IR 2
Type: Contaminated Soil Removal
Description: Recycle concrete debris, hot spot removal Unit 1 and off site dispoasal of surface debris. (Rev 3/2005)
Program: N/A

Estimator Information:
Name: R Stark
Title: Project Estimator
Agency/Org./Office: Bechtel National, Inc
Business Address: PO Box 193965
San Fransisco, CA 94119-3965

Cost Database Date: 2005
Cost Type: User-Defined
Print Date: 5/20/2005 3:39:59 PM

Phase Element Technology Cost Detail Report (without Markups)

Phone: 415-768-2465
Email: rstark@bechtel.com

Prepared Date: 03/30/2005

Reviewer Information:
Name:
Title:
Agency/Org./Office:
Business Address:
Phone:
Email:
Date Reviewed:

Phase Element

Name: Decon Facility
Type: Remedial Action
Labor Rate Group: System Labor Rate
Analysis Rate Group: Navy Clean CTO 024 Rates (Rev1)
Approach: Ex Situ
Start Date: 1/1/2008
Description: Decon facility to clean equipment

Media/Waste Type: N/A
Secondary Media/Waste Type: N/A
Contaminant: None
Secondary Contaminant: None
Markup Template: Navy CleanB No Owner Cost
O&M Markup Template: N/A

Phase Element Technology Cost Detail Report (without Markups)

Technology: Decontamination Facilities

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030109	Pad Subgrade Preparation	133.33	CY	0.00	5.23	1.26	$865.50	☐
17030257	Excavating, trench, medium soil, 4' to 6' deep, 1 C.Y. bucket, gradall, excludes sheeting or dewatering	2.49	BCY	0.00	0.75	0.28	$2.58	☐
17030501	Compaction, subgrade, 18" wide, 8" lifts, walk behind, vibrating plate	133.33	ECY	0.00	2.30	0.13	$323.58	☐
17030510	Dry Roll Gravel, Steel Roller	200.00	SY	0.00	0.67	0.28	$191.20	☐
18010102	Gravel, Delivered & Dumped	55.56	CY	28.98	2.89	1.73	$1,866.45	☐
18010103	Gravel (90%) & Sand Base (10%), with Calcium Chloride 3/4 - 1 Lb/CY	55.56	CY	23.26	2.91	2.23	$1,577.52	☐
18010201	Concrete Curb, 6" x 6"	166.00	LF	1.48	1.67	0.01	$524.54	☐
18020203	26" x 26", 5' Deep Area Drain with Grate	1.00	EA	1,314.62	2,029.46	45.89	$3,389.98	☐
18020321	6" Structural Slab on Grade	1,500.00	SF	3.44	3.42	0.07	$10,396.50	☐
19020313	5' x 5' x 5' Reinforced Concrete Sump	1.00	EA	1,799.05	3,334.90	54.11	$5,188.07	☐
19020604	12" x 12" CIP Concrete In-Ground Trench Drain with Metal Grate	28.00	LF	52.76	65.87	0.32	$3,330.40	☐

Phase Element Technology Cost Detail Report (without Markups)

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
19040606	Storage Tanks, steel, above ground, single wall, 5,000 gallon, incl. cradles, coating & fittings, excl. foundation, pumps or piping	1.00	EA	5,964.25	757.89	0.00	$6,722.15	☐
33080503	Polymeric Liner Anchor Trench, 3' x 1.5'	199.20	LF	0.05	1.94	0.27	$448.68	☐
33080532	8 oz/sy Erosion Control/Drainage Filter Fabric (80 Mil)	200.00	SY	1.00	0.68	0.03	$342.04	☐
33080571	Secure burial cell construction, polymeric liner and cover system, rough textured H.D. polyethylene (HDPE), 40 mil	1,800.00	SF	0.42	0.22	0.01	$1,174.68	☐
33170818	Spray washers, cold water, electric, 1800 psi, 5 GPM, 5 HP, rent/month	4.00	MO	1,557.10	0.00	0.00	$6,228.41	☐
33170823	Operation of Pressure Washer, Including Water, Soap, Electricity, Labor	160.00	HR	9.27	65.69	0.00	$11,993.01	☐
33231306	High Sump Level Switch for Avoiding Overflow	1.00	EA	305.38	219.13	0.00	$524.51	☐
33260623	(2 1/2", 4") PVC Double-wall Piping, with Fittings	30.00	LF	30.14	33.52	0.00	$1,909.73	☐

Phase Element Technology Cost Detail Report (without Markups)

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33290401	Pump, pedestal sump, single stage, 25 GPM, 1 H.P., 1-1/2" discharge	1.00	EA	3,169.12	641.82	0.00	$3,810.95	☐

Total Element Cost	**$60,810.48**
Total 1st Year Technology Cost	**$60,810.48**
Total Phase Element Cost	**$60,810.48**

Phase Element Technology Cost Detail Report (without Markups)

Folder: CTO 024 Rev May_05

Project

Name: CTO 024 NAF El Centro, CA IR Site 2 FS
ID: Navy Clean CTO 024 (23818-024)
Location: EL CENTRO, CALIFORNIA
Modifiers: **Material** 1.406
Labor 1.371
Equipment 1.083
Category: Feasibility Study
Report Option: Calendar Year
Description: The feasibility study consists of two alternatives. Alt 2 includes excavation, recycling of concrete ddebris, and off site disposal of remaining debris and waste and no longterm monitoring. Alt 3 includes recycling of concret debris, hot spot removal, off site disposal of surface debris and 5 years of water monitoring.

Site

Name: Alt 3 Hot Spot Removal \Off site Removal of Debris
ID: IR 2
Type: Contaminated Soil Removal
Description: Recycle concrete debris, hot spot removal Unit 1 and off site dispoasal of surface debris. (Rev 3/2005)
Program: N/A

Estimator Information:

Name: R Stark
Title: Project Estimator
Agency/Org./Office: Bechtel National, Inc
Business Address: PO Box 193965
San Fransisco, CA 94119-3965

Phase Element Technology Cost Detail Report (without Markups)

Phone: 415-768-2465
Email: rstark@bechtel.com
Prepared Date: 03/30/2005

Reviewer Information:
Name:
Title:
Agency/Org./Office:
Business Address:
Phone:
Email:
Date Reviewed:

Phase Element

Name:	Haul debris off-site	**Media/Waste Type:**	Solids
Type:	Remedial Action	**Secondary Media/Waste Type:**	N/A
Labor Rate Group:	System Labor Rate	**Contaminant:**	None
Analysis Rate Group:	Navy Clean CTO 069 Rates	**Secondary Contaminant:**	None
Approach:	Ex Situ	**Markup Template:**	Navy Clean C (No SC Markup)
Start Date:	1/1/2008	**O&M Markup Template:**	N/A
Description:	Haul 29,300 cy to Class II landfill (110 miles one way) and 4,000 cy to class 1 landfill 400 miles one way		

Phase Element Technology Cost Detail Report (without Markups)

Technology: Load and Haul

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17020401	Dump Charges	29,300.00	CY	30.00	0.00	0.00	$879,000.00	☑
17030226	988, 7.0 CY, Wheel Loader	94.00	HR	0.00	55.11	169.19	$21,083.74	☐
17030289	32 CY, Semi Dump	6,560.00	HR	0.00	43.49	75.76	$782,228.18	☐
				Total Element Cost			**$1,682,311.92**	
				Total 1st Year Technology Cost			**$1,682,311.92**	

Phase Element Technology Cost Detail Report (without Markups)

Technology: Professional Labor Management

Element: Professional Labor Percentage

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220138	Project Management Labor Cost	1.00	LS	0.00	24,375.93	0.00	$24,375.93	☑
33220139	Planning Documents Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220140	Construction Oversight Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220141	Reporting Labor Cost	1.00	LS	0.00	6,093.98	0.00	$6,093.98	☑
33220142	As-Built Drawings Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220143	Public Notice Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220144	Site Closure Activities Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220145	Permitting Labor Cost	1.00	LS	0.00	30,469.91	0.00	$30,469.91	☑
33220146	Responsible Party Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220147	Reimbursement Claims Preparation Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220148	Other Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
				Total Element Cost			**$60,939.82**	
				Total 1st Year Technology Cost			**$60,939.82**	

Phase Element Technology Cost Detail Report (without Markups)

Technology: Off-site Transportation and Waste Disposal

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33190102	Bulk Solid Hazardous Waste Loading Into Truck	4,000.00	CY	0.00	1.05	1.65	$10,792.40	☐
33190311	Commercial RCRA landfills, truck washout	200.00	EA	222.44	0.00	0.00	$44,488.66	☐
33197264	Commercial RCRA landfills, bulk waste, solid, less than 2,000 lb/CY	4,000.00	CY	175.00	0.00	0.00	$700,000.00	☑

Total Element Cost	**$755,281.06**
Total 1st Year Technology Cost	**$755,281.06**
Total Phase Element Cost	**$2,498,532.80**

Phase Element Technology Cost Detail Report (without Markups)

Folder: CTO 024 Rev May_05

Project

Name: CTO 024 NAF El Centro, CA IR Site 2 FS
ID: Navy Clean CTO 024 (23818-024)
Location: EL CENTRO, CALIFORNIA
Modifiers: **Material** 1.406
Labor 1.371
Equipment 1.083
Category: Feasibility Study
Report Option: Calendar Year
Description: The feasibility study consists of two alternatives. Alt 2 includes excavation, recycling of concrete ddebris, and off site disposal of remaining debris and waste and no longterm monitoring. Alt 3 includes recycling of concret debris, hot spot removal, off site disposal of surface debris and 5 years of water monitoring.

Site

Name: Alt 3 Hot Spot Removal \Off site Removal of Debris
ID: IR 2
Type: Contaminated Soil Removal
Description: Recycle concrete debris, hot spot removal Unit 1 and off site dispoasal of surface debris. (Rev 3/2005)
Program: N/A

Estimator Information:
Name: R Stark
Title: Project Estimator
Agency/Org./Office: Bechtel National, Inc
Business Address: PO Box 193965
San Fransisco, CA 94119-3965

Cost Database Date: 2005
Cost Type: User-Defined
Print Date: 5/20/2005 3:42:17 PM

Phase Element Technology Cost Detail Report (without Markups)

Phone: 415-768-2465
Email: rstark@bechtel.com
Prepared Date: 03/30/2005

Reviewer Information:
Name:
Title:
Agency/Org./Office:
Business Address:
Phone:
Email:
Date Reviewed:

Phase Element

Name: Monitoring Wells
Type: Remedial Action
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate
Approach: Ex Situ
Start Date: 1/1/2008
Description: Install 2 -2" x 30' wells w/10 screen

Media/Waste Type: Groundwater
Secondary Media/Waste Type: N/A
Contaminant: None
Secondary Contaminant: None
Markup Template: Navy CleanB No Owner Cost
O&M Markup Template: N/A

Phase Element Technology Cost Detail Report (without Markups)

Technology: Groundwater Monitoring Well

Element: Aquifer 1

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33020303	Organic Vapor Analyzer Rental, per Day	1.00	DAY	161.20	0.00	0.00	$161.20	☐
33170808	Decontaminate Rig, Augers, Screen (Rental Equipment)	1.00	DAY	23.48	525.50	0.00	$548.98	☐
33220112	Field Technician	16.00	HR	0.00	38.79	0.00	$620.66	☐
33230101	2" PVC, Schedule 40, Well Casing	40.00	LF	1.58	3.78	7.33	$507.85	☐
33230201	2" PVC, Schedule 40, Well Screen	20.00	LF	3.66	4.88	9.46	$359.85	☐
33230301	2" PVC, Well Plug	2.00	EA	7.71	5.67	11.00	$48.75	☐
33231101	Hollow Stem Auger, 8" Dia Borehole, Depth <= 100 ft	62.00	LF	0.00	10.36	20.11	$1,889.13	☐
33231173	Split Spoon Sampling	14.00	LF	0.00	16.20	31.42	$666.68	☐
33231182	DOT steel drums, 55 gal., open, 17C	4.00	EA	115.32	0.00	0.00	$461.28	☐
33231401	2" Screen, Filter Pack	24.00	LF	4.11	3.21	6.23	$325.38	☐
33231811	2" Well, Portland Cement Grout	34.00	LF	1.53	0.00	0.00	$52.07	☐
33232101	2" Well, Bentonite Seal	2.00	EA	12.22	12.75	24.75	$99.45	☐
			Total Element Cost				**$5,741.30**	

Cost Database Date: 2005

Cost Type: User-Defined

Print Date: 5/20/2005 3:42:17 PM

Phase Element Technology Cost Detail Report (without Markups)

Element: General Aquifers

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33010101	Mobilize/DeMobilize Drilling Rig & Crew	1.00	LS	0.00	1,346.61	996.44	$2,343.05	☐
33231504	Surface Pad, Concrete, 2' x 2' x 4"	2.00	EA	51.04	17.71	1.81	$141.13	☐
				Total Element Cost			**$2,484.18**	
				Total 1st Year Technology Cost			**$8,225.48**	

Phase Element Technology Cost Detail Report (without Markups)

Technology: Professional Labor Management

Element: Professional Labor Percentage

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220138	Project Management Labor Cost	1.00	LS	0.00	411.27	0.00	$411.27	☑
33220139	Planning Documents Labor Cost	1.00	LS	0.00	329.02	0.00	$329.02	☑
33220140	Construction Oversight Labor Cost	1.00	LS	0.00	267.33	0.00	$267.33	☑
33220141	Reporting Labor Cost	1.00	LS	0.00	61.69	0.00	$61.69	☑
33220142	As-Built Drawings Labor Cost	1.00	LS	0.00	61.69	0.00	$61.69	☑
33220143	Public Notice Labor Cost	1.00	LS	0.00	20.56	0.00	$20.56	☑
33220144	Site Closure Activities Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220145	Permitting Labor Cost	1.00	LS	0.00	411.27	0.00	$411.27	☑
33220146	Responsible Party Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220147	Reimbursement Claims Preparation Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220148	Other Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐

Total Element Cost	**$1,562.84**
Total 1st Year Technology Cost	**$1,562.84**
Total Phase Element Cost	**$9,788.32**

Phase Element Technology Cost Detail Report
(without Markups)

Folder: CTO 024 Rev May_05

Project

Name: CTO 024 NAF El Centro, CA IR Site 2 FS
ID: Navy Clean CTO 024 (23818-024)
Location: EL CENTRO, CALIFORNIA
Modifiers: **Material** 1.406
Labor 1.371
Equipment 1.083
Category: Feasibility Study
Report Option: Calendar Year
Description: The feasibility study consists of two alternatives. Alt 2 includes excavation, recycling of concrete ddebris, and off site disposal of remaining debris and waste and no longterm monitoring. Alt 3 includes recycling of concret debris, hot spot removal, off site disposal of surface debris and 5 years of water monitoring.

Site

Name: Alt 3 Hot Spot Removal \Off site Removal of Debris
ID: IR 2
Type: Contaminated Soil Removal
Description: Recycle concrete debris, hot spot removal Unit 1 and off site dispoasal of surface debris. (Rev 3/2005)
Program: N/A

Estimator Information:
Name: R Stark
Title: Project Estimator
Agency/Org./Office: Bechtel National, Inc
Business Address: PO Box 193965
San Fransisco, CA 94119-3965

Cost Database Date: 2005
Cost Type: User-Defined
Print Date: 5/20/2005 3:42:50 PM

Phase Element Technology Cost Detail Report (without Markups)

Phone: 415-768-2465
Email: rstark@bechtel.com

Prepared Date: 03/30/2005

Reviewer Information:
Name:
Title:
Agency/Org./Office:
Business Address:
Phone:
Email:
Date Reviewed:

Phase Element

Name:	Recycle Concrete Debris	**Media/Waste Type:**	N/A
Type:	Remedial Action	**Secondary Media/Waste Type:**	N/A
Labor Rate Group:	System Labor Rate	**Contaminant:**	None
Analysis Rate Group:	System Analysis Rate	**Secondary Contaminant:**	None
Approach:	Ex Situ	**Markup Template:**	Navy Clean C (No SC Markup)
Start Date:	1/1/2008	**O&M Markup Template:**	N/A
Description:	Screen 35,800 cy of debris for concrete to be recycled and recyle 14,300 cy. (Rev May 05)		

Phase Element Technology Cost Detail Report (without Markups)

Technology: RECYCLE CONCRETE

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
95011004	Crush Demolished Concrete no Reinf	14,300.00	CY	17.40	0.00	0.00	$248,820.00	☑
				Total Element Cost			**$248,820.00**	
				Total 1st Year Technology Cost			**$248,820.00**	

Phase Element Technology Cost Detail Report (without Markups)

Technology: Professional Labor Management

Element: Professional Labor Percentage

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220138	Project Management Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220139	Planning Documents Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220140	Construction Oversight Labor Cost	1.00	LS	0.00	2,488.20	0.00	$2,488.20	☑
33220141	Reporting Labor Cost	1.00	LS	0.00	1,244.10	0.00	$1,244.10	☑
33220142	As-Built Drawings Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220143	Public Notice Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220144	Site Closure Activities Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220145	Permitting Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220146	Responsible Party Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220147	Reimbursement Claims Preparation Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220148	Other Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐

Total Element Cost	**$3,732.30**
Total 1st Year Technology Cost	**$3,732.30**
Total Phase Element Cost	**$252,552.30**

Cost Database Date: 2005

Cost Type: User-Defined

Print Date: 5/20/2005 3:42:50 PM

Phase Element Technology Cost Detail Report (without Markups)

Folder: CTO 024 Rev May_05

Project

Name: CTO 024 NAF El Centro, CA IR Site 2 FS
ID: Navy Clean CTO 024 (23818-024)
Location: EL CENTRO, CALIFORNIA
Modifiers: **Material** 1.406
Labor 1.371
Equipment 1.083
Category: Feasibility Study
Report Option: Calendar Year
Description: The feasibility study consists of two alternatives. Alt 2 includes excavation, recycling of concrete ddebris, and off site disposal of remaining debris and waste and no longterm monitoring. Alt 3 includes recycling of concret debris, hot spot removal, off site disposal of surface debris and 5 years of water monitoring.

Site

Name: Alt 3 Hot Spot Removal \Off site Removal of Debris
ID: IR 2
Type: Contaminated Soil Removal
Description: Recycle concrete debris, hot spot removal Unit 1 and off site dispoasal of surface debris. (Rev 3/2005)
Program: N/A

Estimator Information:

Name: R Stark
Title: Project Estimator
Agency/Org./Office: Bechtel National, Inc
Business Address: PO Box 193965
San Fransisco, CA 94119-3965

Cost Database Date: 2005
Cost Type: User-Defined
Print Date: 5/20/2005 3:43:40 PM

Phase Element Technology Cost Detail Report (without Markups)

Phone: 415-768-2465
Email: rstark@bechtel.com

Prepared Date: 03/30/2005

Reviewer Information:
Name:
Title:
Agency/Org./Office:
Business Address:
Phone:
Email:
Date Reviewed:

Phase Element

Name: Soil Confirmation
Type: Remedial Action
Labor Rate Group: System Labor Rate
Analysis Rate Group: Navy Clean CTO 024 Rates (Rev1)
Approach: Ex Situ
Start Date: 1/1/2008
Description: Soil confirmation following excavation for 17.6 Acres.

Media/Waste Type: Solids
Secondary Media/Waste Type: N/A
Contaminant: None
Secondary Contaminant: None
Markup Template: Navy CleanB No Owner Cost
O&M Markup Template: N/A

Phase Element Technology Cost Detail Report (without Markups)

Technology: Site Inspection

Element: Planning

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220102	Project Manager	5.00	HR	0.00	62.59	0.00	$312.94	☐
33220109	Staff Scientist	16.00	HR	0.00	52.07	0.00	$833.11	☐
33240101	Other Direct Costs	1.00	LS	21.40	0.00	0.00	$21.40	☑
				Total Element Cost			**$1,167.44**	

Element: Sampling and Analysis

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33010104	Sample collection, vehicle mileage charge, car or van	270.00	MI	0.23	0.00	0.00	$60.75	☐
33010202	Sample collection, sampling personnel travel, per diem	2.00	DAY	86.00	0.00	0.00	$172.00	☑
33020343	Photo-Ionization Detector, HnU, Weekly Rental	1.00	WK	483.61	0.00	0.00	$483.61	☐
33020401	Disposable Materials per Sample	36.00	EA	11.71	0.00	0.00	$421.62	☐
33020402	Decontamination Materials per Sample	36.00	EA	10.43	0.00	0.00	$375.57	☐
33020603	Surface Soil Sampling Equipment	1.00	EA	520.19	0.00	0.00	$520.19	☐
33021709	Testing, TAL metals (6010/7000s)	49.00	EA	209.00	0.00	0.00	$10,241.00	☑

Phase Element Technology Cost Detail Report (without Markups)

Element: Sampling and Analysis

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33021717	Pesticides/PCBs (SW 3550B/SW 8081/8082), Soil Analysis	43.00	EA	182.00	0.00	0.00	$7,826.00	☑
33029533	SVOC's (EPA8270C) (7.3)	43.00	LS	274.00	0.00	0.00	$11,782.00	☑
33220112	Field Technician	32.00	HR	0.00	38.79	0.00	$1,241.32	☐
				Total Element Cost			**$33,124.07**	
				Total 1st Year Technology Cost			**$34,291.52**	

Phase Element Technology Cost Detail Report (without Markups)

Technology: Professional Labor Management

Element: Professional Labor Percentage

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220138	Project Management Labor Cost	1.00	LS	0.00	1,714.58	0.00	$1,714.58	☑
33220139	Planning Documents Labor Cost	1.00	LS	0.00	1,371.66	0.00	$1,371.66	☑
33220140	Construction Oversight Labor Cost	1.00	LS	0.00	1,114.47	0.00	$1,114.47	☑
33220141	Reporting Labor Cost	1.00	LS	0.00	257.19	0.00	$257.19	☑
33220142	As-Built Drawings Labor Cost	1.00	LS	0.00	257.19	0.00	$257.19	☑
33220143	Public Notice Labor Cost	1.00	LS	0.00	85.73	0.00	$85.73	☑
33220144	Site Closure Activities Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220145	Permitting Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220146	Responsible Party Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220147	Reimbursement Claims Preparation Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220148	Other Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐

Total Element Cost	**$4,800.81**
Total 1st Year Technology Cost	**$4,800.81**
Total Phase Element Cost	**$39,092.33**

Cost Database Date: 2005

Cost Type: User-Defined

Print Date: 5/20/2005 3:43:40 PM

Phase Element Technology Cost Detail Report (without Markups)

Folder: CTO 024 Rev May_05

Project

Name: CTO 024 NAF El Centro, CA IR Site 2 FS
ID: Navy Clean CTO 024 (23818-024)
Location: EL CENTRO, CALIFORNIA
Modifiers: **Material** 1.406
Labor 1.371
Equipment 1.083
Category: Feasibility Study
Report Option: Calendar Year
Description: The feasibility study consists of two alternatives. Alt 2 includes excavation, recycling of concrete ddebris, and off site disposal of remaining debris and waste and no longterm monitoring. Alt 3 includes recycling of concret debris, hot spot removal, off site disposal of surface debris and 5 years of water monitoring.

Site

Name: Alt 3 Hot Spot Removal \Off site Removal of Debris
ID: IR 2
Type: Contaminated Soil Removal
Description: Recycle concrete debris, hot spot removal Unit 1 and off site dispoasal of surface debris. (Rev 3/2005)
Program: N/A

Estimator Information:
Name: R Stark
Title: Project Estimator
Agency/Org./Office: Bechtel National, Inc
Business Address: PO Box 193965
San Fransisco, CA 94119-3965

Phase Element Technology Cost Detail Report (without Markups)

Phone: 415-768-2465
Email: rstark@bechtel.com

Prepared Date: 03/30/2005

Reviewer Information:
Name:
Title:
Agency/Org./Office:
Business Address:
Phone:
Email:
Date Reviewed:

Phase Element

Name:	Soil Stabilization Stone Columns and 3' mat	**Media/Waste Type:**	N/A
Type:	Remedial Action	**Secondary Media/Waste Type:**	N/A
Labor Rate Group:	System Labor Rate	**Contaminant:**	None
Analysis Rate Group:	System Analysis Rate	**Secondary Contaminant:**	None
Approach:	Ex Situ	**Markup Template:**	Navy Clean C (No SC Markup)
Start Date:	1/1/2008	**O&M Markup Template:**	N/A

Description: Stabilize the soil be vibro-compaction stone columns and a 3' geogrid wraped stone mat

Phase Element Technology Cost Detail Report (without Markups)

Technology: VIBRO-COMPACTION STONE COLUMNS

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
95010818	Vibro-compaction (stone columns)	13,000.00	LF	30.00	0.00	0.00	$390,000.00	☑
99060201	Equipment Mobilization	1.00	LS	85,000.00	0.00	0.00	$85,000.00	☑
99060501	Demobilization	1.00	LS	85,000.00	0.00	0.00	$85,000.00	☑
				Total Element Cost			**$560,000.00**	
				Total 1st Year Technology Cost			**$560,000.00**	

Phase Element Technology Cost Detail Report (without Markups)

Technology: STONE MAT (3') W/ GEOGRID WRAP

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030418	Delivered & Dumped, Backfill with Stone	8,100.00	BCY	34.77	0.87	0.96	$296,413.02	☐
95011013	Geogrid Fabric (Tensar BX 1200)	39,200.00	SY	3.00	0.37	0.00	$131,943.28	☑
				Total Element Cost			**$428,356.30**	
				Total 1st Year Technology Cost			**$428,356.30**	

Phase Element Technology Cost Detail Report (without Markups)

Technology: Professional Labor Management

Element: Professional Labor Percentage

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220138	Project Management Labor Cost	1.00	LS	0.00	24,708.91	0.00	$24,708.91	☑
33220139	Planning Documents Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220140	Construction Oversight Labor Cost	1.00	LS	0.00	27,179.80	0.00	$27,179.80	☑
33220141	Reporting Labor Cost	1.00	LS	0.00	3,459.25	0.00	$3,459.25	☑
33220142	As-Built Drawings Labor Cost	1.00	LS	0.00	3,459.25	0.00	$3,459.25	☑
33220143	Public Notice Labor Cost	1.00	LS	0.00	741.27	0.00	$741.27	☑
33220144	Site Closure Activities Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220145	Permitting Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220146	Responsible Party Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220147	Reimbursement Claims Preparation Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220148	Other Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐

Total Element Cost	**$59,548.47**
Total 1st Year Technology Cost	**$59,548.47**
Total Phase Element Cost	**$1,047,904.77**

Cost Database Date: 2005

Cost Type: User-Defined

Print Date: 5/20/2005 3:44:10 PM

Phase Element Technology Cost Detail Report (without Markups)

Folder: CTO 024 Rev May_05

Project

Name: CTO 024 NAF El Centro, CA IR Site 2 FS
ID: Navy Clean CTO 024 (23818-024)
Location: EL CENTRO, CALIFORNIA
Modifiers: **Material** 1.406
Labor 1.371
Equipment 1.083
Category: Feasibility Study
Report Option: Calendar Year
Description: The feasibility study consists of two alternatives. Alt 2 includes excavation, recycling of concrete ddebris, and off site disposal of remaining debris and waste and no longterm monitoring. Alt 3 includes recycling of concret debris, hot spot removal, off site disposal of surface debris and 5 years of water monitoring.

Site

Name: Alt 3 Hot Spot Removal \Off site Removal of Debris
ID: IR 2
Type: Contaminated Soil Removal
Description: Recycle concrete debris, hot spot removal Unit 1 and off site dispoasal of surface debris. (Rev 3/2005)
Program: N/A

Estimator Information:

Name: R Stark
Title: Project Estimator
Agency/Org./Office: Bechtel National, Inc
Business Address: PO Box 193965
San Fransisco, CA 94119-3965

Phase Element Technology Cost Detail Report (without Markups)

Phone: 415-768-2465
Email: rstark@bechtel.com
Prepared Date: 03/30/2005

Reviewer Information:
Name:
Title:
Agency/Org./Office:
Business Address:
Phone:
Email:
Date Reviewed:

Phase Element

Name: Waste Profiling
Type: Remedial Action
Labor Rate Group: System Labor Rate
Analysis Rate Group: Navy Clean CTO 024 Rates (Rev1)
Approach: Ex Situ
Start Date: 1/1/2008
Description: Waste profiling (1 sample/500 cy) during excavation and debris removal 32,700cy

Media/Waste Type: Solids
Secondary Media/Waste Type: N/A
Contaminant: None
Secondary Contaminant: None
Markup Template: Navy CleanB No Owner Cost
O&M Markup Template: N/A

Phase Element Technology Cost Detail Report (without Markups)

Technology: Site Inspection

Element: Planning

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220102	Project Manager	5.00	HR	0.00	62.59	0.00	$312.94	☐
33220109	Staff Scientist	16.00	HR	0.00	52.07	0.00	$833.11	☐
33240101	Other Direct Costs	1.00	LS	21.40	0.00	0.00	$21.40	☑
				Total Element Cost			**$1,167.44**	

Element: Sampling and Analysis

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33010104	Sample collection, vehicle mileage charge, car or van	270.00	MI	0.23	0.00	0.00	$60.75	☐
33010202	Sample collection, sampling personnel travel, per diem	4.00	DAY	86.00	0.00	0.00	$344.00	☑
33020343	Photo-Ionization Detector, HnU, Weekly Rental	1.00	WK	483.61	0.00	0.00	$483.61	☐
33020401	Disposable Materials per Sample	78.00	EA	11.71	0.00	0.00	$913.52	☐
33020402	Decontamination Materials per Sample	78.00	EA	10.43	0.00	0.00	$813.74	☐
33020603	Surface Soil Sampling Equipment	1.00	EA	520.19	0.00	0.00	$520.19	☐
33021709	Testing, TAL metals (6010/7000s)	78.00	EA	209.00	0.00	0.00	$16,302.00	☑

Phase Element Technology Cost Detail Report (without Markups)

Element: Sampling and Analysis

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33021717	Pesticides/PCBs (SW 3550B/SW 8081/8082), Soil Analysis	78.00	EA	182.00	0.00	0.00	$14,196.00	☑
33029522	Pesticides/PCB's EPA 8081A/8082 (3.3)	78.00	LS	236.00	0.00	0.00	$18,408.00	☑
33029529	VOC's (EPA 8260B) (6.5)	78.00	LS	165.00	0.00	0.00	$12,870.00	☑
33029533	SVOC's (EPA8270C) (7.3)	78.00	LS	274.00	0.00	0.00	$21,372.00	☑
33029535	TCLP Metals	78.00	LS	161.00	0.00	0.00	$12,558.00	☑
33029540	TCLP VOC	78.00	LS	242.00	0.00	0.00	$18,876.00	☑
33029541	TCLP SVOC's	78.00	LS	332.00	0.00	0.00	$25,896.00	☑
33220112	Field Technician	260.00	HR	0.00	38.79	0.00	$10,085.76	☐
				Total Element Cost			**$153,699.57**	
				Total 1st Year Technology Cost			**$154,867.02**	

Phase Element Technology Cost Detail Report (without Markups)

Technology: Professional Labor Management

Element: Professional Labor Percentage

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220138	Project Management Labor Cost	1.00	LS	0.00	6,194.68	0.00	$6,194.68	☑
33220139	Planning Documents Labor Cost	1.00	LS	0.00	5,420.35	0.00	$5,420.35	☑
33220140	Construction Oversight Labor Cost	1.00	LS	0.00	4,646.01	0.00	$4,646.01	☑
33220141	Reporting Labor Cost	1.00	LS	0.00	542.03	0.00	$542.03	☑
33220142	As-Built Drawings Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220143	Public Notice Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220144	Site Closure Activities Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220145	Permitting Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220146	Responsible Party Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220147	Reimbursement Claims Preparation Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220148	Other Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐

Total Element Cost	**$16,803.07**
Total 1st Year Technology Cost	**$16,803.07**
Total Phase Element Cost	**$171,670.09**

Cost Database Date: 2005

Cost Type: User-Defined

Print Date: 5/20/2005 3:44:40 PM

Phase Element Technology Cost Detail Report (without Markups)

Folder: CTO 024 Rev May_05

Project

Name: CTO 024 NAF El Centro, CA IR Site 2 FS
ID: Navy Clean CTO 024 (23818-024)
Location: EL CENTRO, CALIFORNIA
Modifiers: **Material** 1.406
Labor 1.371
Equipment 1.083
Category: Feasibility Study
Report Option: Calendar Year
Description: The feasibility study consists of two alternatives. Alt 2 includes excavation, recycling of concrete ddebris, and off site disposal of remaining debris and waste and no longterm monitoring. Alt 3 includes recycling of concret debris, hot spot removal, off site disposal of surface debris and 5 years of water monitoring.

Site

Name: Alt 3 Hot Spot Removal \Off site Removal of Debris
ID: IR 2
Type: Contaminated Soil Removal
Description: Recycle concrete debris, hot spot removal Unit 1 and off site dispoasal of surface debris. (Rev 3/2005)
Program: N/A

Estimator Information:
Name: R Stark
Title: Project Estimator
Agency/Org./Office: Bechtel National, Inc
Business Address: PO Box 193965
San Fransisco, CA 94119-3965

Phase Element Technology Cost Detail Report (without Markups)

Phone: 415-768-2465
Email: rstark@bechtel.com

Prepared Date: 03/30/2005

Reviewer Information:
Name:
Title:
Agency/Org./Office:
Business Address:
Phone:
Email:
Date Reviewed:

Phase Element

Name: Monitoring 5 Year
Type: Long Term Monitoring
Labor Rate Group: System Labor Rate
Analysis Rate Group: Navy Clean CTO 024 Rates (Rev1)
Approach: None
Start Date: 1/1/2008
Description: Monitor 4 wells quarterly for 5 years. Water level measured quarterly for 5 years. Two Water level measurements are taken w/ the quarterly sampling. Additonal Svoc's and pesticide sampling taken only in year 5.

Media/Waste Type: Groundwater
Secondary Media/Waste Type: N/A
Contaminant: None
Secondary Contaminant: None
Markup Template: Navy CleanB No Owner Cost
O&M Markup Template: N/A

Phase Element Technology Cost Detail Report (without Markups)

Technology: Monitoring

Element: Groundwater

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33020401	Disposable Materials per Sample	17.00	EA	11.71	0.00	0.00	$199.10	☐
33020402	Decontamination Materials per Sample	17.00	EA	10.43	0.00	0.00	$177.35	☐
33021509	Monitor well sampling equipment, rental, water quality testing parameter device rental	1.00	WK	327.94	0.00	0.00	$327.94	☐
33021602	Testing, soil & sediment analysis, pH, electrometric (9045)	12.00	EA	8.00	0.00	0.00	$96.00	☑
33029506	Metals (EPA 6020)	14.00	LS	200.00	0.00	0.00	$2,800.00	☑
33029512	VOCs (EPA 8260B) (1.5)	12.00	LS	157.00	0.00	0.00	$1,884.00	☑
33029524	Anions (Sulfate, Phosphate, Chloride,Nitrate)(EPA 300)	12.00	LS	66.00	0.00	0.00	$792.00	☑
33029526	TDS (160.1)	12.00	LS	15.00	0.00	0.00	$180.00	☑
33231186	Well Development Equipment Rental (weekly)	1.00	WK	607.32	64.20	0.00	$671.51	☐
33231189	DOT steel drums, 55 gal., open, 17C	8.00	EA	115.32	0.00	0.00	$922.56	☐
33232407	PVC bailers, disposable polyethylene, 1.50" OD x 36"	8.00	EA	8.45	0.00	0.00	$67.60	☐

Phase Element Technology Cost Detail Report (without Markups)

				Total Element Cost		**$8,118.06**	

Element: General Monitoring

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33010104	Sample collection, vehicle mileage charge, car or van	500.00	MI	0.23	0.00	0.00	$112.50	☐
33010202	Sample collection, sampling personnel travel, per diem	4.00	DAY	86.00	0.00	0.00	$344.00	☑
33220108	Project Scientist	77.00	HR	0.00	70.25	0.00	$5,409.56	☐
33220112	Field Technician	41.00	HR	0.00	38.79	0.00	$1,590.45	☐
33220114	Word Processing/Clerical	9.00	HR	0.00	27.02	0.00	$243.20	☐
33220115	Draftsman/CADD	9.00	HR	0.00	35.33	0.00	$317.94	☐
				Total Element Cost			**$8,017.65**	
				Total 1st Year Technology Cost			**$16,135.72**	

Phase Element Technology Cost Detail Report (without Markups)

Technology: Monitoring

Element: General Monitoring

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33010104	Sample collection, vehicle mileage charge, car or van	500.00	MI	0.23	0.00	0.00	$112.50	☐
33010202	Sample collection, sampling personnel travel, per diem	4.00	DAY	86.00	0.00	0.00	$344.00	☑
33220108	Project Scientist	4.00	HR	0.00	70.25	0.00	$281.02	☐
33220112	Field Technician	41.00	HR	0.00	38.79	0.00	$1,590.45	☐
33220114	Word Processing/Clerical	4.00	HR	0.00	27.02	0.00	$108.09	☐
33220115	Draftsman/CADD	4.00	HR	0.00	35.33	0.00	$141.31	☐
				Total Element Cost			**$2,577.36**	
				Total 1st Year Technology Cost			**$2,577.36**	

Phase Element Technology Cost Detail Report (without Markups)

Technology: Monitoring

Element: Groundwater

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33020401	Disposable Materials per Sample	6.00	EA	11.71	0.00	0.00	$70.27	☐
33020402	Decontamination Materials per Sample	6.00	EA	10.43	0.00	0.00	$62.60	☐
33021617	Pesticides/PCBs (EPA 608), Water Analysis	6.00	EA	241.81	0.00	0.00	$1,450.84	☐
33029533	SVOC's (EPA8270C) (7.3)	6.00	LS	274.00	0.00	0.00	$1,644.00	☑
33232407	PVC bailers, disposable polyethylene, 1.50" OD x 36"	4.00	EA	8.45	0.00	0.00	$33.80	☐
				Total Element Cost			**$3,261.50**	

Element: General Monitoring

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33010104	Sample collection, vehicle mileage charge, car or van	2.00	MI	0.23	0.00	0.00	$0.45	☐
33220112	Field Technician	16.00	HR	0.00	38.79	0.00	$620.66	☐
				Total Element Cost			**$621.11**	
				Total 1st Year Technology Cost			**$3,882.62**	

Cost Database Date: 2005

Cost Type: User-Defined

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Phase Element Technology Cost Detail Report (without Markups)

Total Phase Element Cost	**$22,595.70**

ATTACHMENT D

SITE COST DETAIL REPORT FOR ALTERNATIVE 4

Site Cost Detail Report
(with Markups)

Folder: CTO 024 Rev May_05

Project

Name: CTO 024 NAF El Centro, CA IR Site 2 FS
ID: Navy Clean CTO 024 (23818-024)
Location: EL CENTRO, CALIFORNIA
Modifiers: **Material** 1.406
Labor 1.371
Equipment 1.083
Category: Feasibility Study
Report Option: Calendar Year
Description: The feasibility study consists of two alternatives. Alt 2 includes excavation, recycling of concrete ddebris, and off site disposal of remaining debris and waste and no longterm monitoring. Alt 3 includes recycling of concret debris, hot spot removal, off site disposal of surface debris and 5 years of water monitoring.

Site

Name: Alt 4 Hot Spot Removal \Off site Removal
ID: IR 2
Type: Contaminated Soil Removal
Description: Recycle concrete debris, hot spot removal Unit 1 and off site dispoasal of surface debris. (Rev 3/2005).
Program: N/A

Estimator Information:

Name: R Stark
Title: Project Estimator
Agency/Org./Office: Bechtel National, Inc
Business Address: PO Box 193965
San Fransisco, CA 94119-3965
Phone: 415-768-2465

Site Cost Detail Report
(with Markups)

Email: rstark@bechtel.com
Prepared Date: 03/30/2005

Reviewer Information:
Name:
Title:
Agency/Org./Office:
Business Address:
Phone:
Email:
Date Reviewed:

Phase Element (Markup Template)	Direct Cost	General Conditions	Overhead	Sub Profit	Prime Markup on Sub	Prime Profit	Risk	Owner Cost	Markup Total	Total
Remedial Design	$78,449								$118,692	$197,141
(Navy CleanB No Owner		$5,885	$97,365	$0	$0	$15,442	$0	$0		
Asphalt Cover	$1,043,204								$377,396	$1,420,600
(Navy Clean C (No SC		$57,444	$208,661	$0	$0	$111,291	$0	$0		
Consolidate Unit 1 Debris and Excav Mat'	$18,659								$13,875	$32,534
(Navy CleanB No Owner		$4,153	$7,174	$0	$0	$2,549	$0	$0		
Cover Unit 1	$180,488								$21,505	$201,993
(Navy Clean C (No SC		$1,024	$20,481	$0	$0	$0	$0	$0		
Decon Facility	$60,810								$24,635	$85,445
(Navy CleanB No Owner		$6,887	$11,054	$0	$0	$6,694	$0	$0		

Site Cost Detail Report
(with Markups)

Phase Element (Markup Template)	Direct Cost	General Conditions	Overhead	Sub Profit	Prime Markup on Sub	Prime Profit	Risk	Owner Cost	Markup Total	Total
Demo Monitoring Wells	$5,600								$3,044	$8,644
(Navy CleanB No Owner		$1,699	$668	$0	$0	$677	$0	$0		
Haul debris off-site	$2,021,890								$369,848	$2,391,738
(Navy Clean C (No SC		$22,191	$69,040	$20,120	$71,125	$187,371	$0	$0		
Monitoring Wells	$9,788								$8,317	$18,105
(Navy CleanB No Owner		$2,870	$4,028	$0	$0	$1,418	$0	$0		
Recycle Concrete Debris	$252,552								$43,607	$296,159
(Navy Clean C (No SC		$2,675	$6,221	$2,538	$8,972	$23,201	$0	$0		
Soil Confirmation	$39,092								$20,018	$59,110
(Navy CleanB No Owner		$3,886	$11,519	$0	$0	$4,612	$0	$0		
Waste Profiling	$132,715								$59,499	$192,214
(Navy CleanB No Owner		$8,272	$36,201	$0	$0	$15,027	$0	$0		
Monitoring 5 Year	$83,444								$75,975	$159,419
(Navy CleanB No Owner		$10,761	$53,027	$0	$0	$12,186	$0	$0		
Total Site Cost	$3,926,691	$127,746	$525,439	$22,658	$80,097	$380,470	$0	$0	$1,136,409	$5,063,100

Cost Database Date: 2005

Cost Type: User-Defined

Print Date: 5/20/2005 3:47:29 PM

Phase Element Technology Cost Detail Report (without Markups)

Folder: CTO 024 Rev May_05

Project

Name: CTO 024 NAF El Centro, CA IR Site 2 FS
ID: Navy Clean CTO 024 (23818-024)
Location: EL CENTRO, CALIFORNIA
Modifiers: **Material** 1.406
Labor 1.371
Equipment 1.083
Category: Feasibility Study
Report Option: Calendar Year
Description: The feasibility study consists of two alternatives. Alt 2 includes excavation, recycling of concrete ddebris, and off site disposal of remaining debris and waste and no longterm monitoring. Alt 3 includes recycling of concret debris, hot spot removal, off site disposal of surface debris and 5 years of water monitoring.

Site

Name: Alt 4 Hot Spot Removal \Off site Removal of Debris
ID: IR 2
Type: Contaminated Soil Removal
Description: Recycle concrete debris, hot spot removal Unit 1 and off site dispoasal of surface debris. (Rev 3/2005).
Program: N/A

Estimator Information:

Name: R Stark
Title: Project Estimator
Agency/Org./Office: Bechtel National, Inc
Business Address: PO Box 193965
San Fransisco, CA 94119-3965

Phase Element Technology Cost Detail Report (without Markups)

Phone: 415-768-2465
Email: rstark@bechtel.com

Prepared Date: 03/30/2005

Reviewer Information:
Name:
Title:
Agency/Org./Office:
Business Address:
Phone:
Email:
Date Reviewed:

Phase Element

Name: Remedial Design
Type: Design
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate
Approach: None
Start Date: 1/1/2008
Description: Design for excavation and AC cap

Media/Waste Type: *Solids*
Secondary Media/Waste Type: N/A
Contaminant: None
Secondary Contaminant: None
Markup Template: Navy CleanB No Owner Cost
O&M Markup Template: N/A

Phase Element Technology Cost Detail Report (without Markups)

Technology: Remedial Design

Element: Project Planning

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33010104	Sample collection, vehicle mileage charge, car or van	110.00	MI	0.23	0.00	0.00	$24.75	☐
33220102	Project Manager	26.00	HR	0.00	51.32	0.00	$1,334.37	☐
33220103	Office Manager	13.00	HR	0.00	56.83	0.00	$738.80	☐
33220105	Project Engineer	12.00	HR	0.00	49.77	0.00	$597.21	☐
33220106	Staff Engineer	34.00	HR	0.00	43.55	0.00	$1,480.76	☐
33220109	Staff Scientist	133.00	HR	0.00	42.70	0.00	$5,678.67	☐
33220110	QA/QC Officer	24.00	HR	0.00	41.97	0.00	$1,007.40	☐
33220111	Certified Industrial Hygienist	13.00	HR	0.00	53.26	0.00	$692.41	☐
33220112	Field Technician	16.00	HR	0.00	31.81	0.00	$508.94	☐
33220113	Secretarial/ Administrative	13.00	HR	0.00	25.54	0.00	$332.06	☐
33220114	Word Processing/Clerical	22.00	HR	0.00	22.16	0.00	$487.49	☐
33220115	Draftsman/CADD	11.00	HR	0.00	28.97	0.00	$318.65	☐
33240101	Other Direct Costs	1.00	LS	134.40	0.00	0.00	$134.40	☑
				Total Element Cost			**$13,335.93**	

Phase Element Technology Cost Detail Report (without Markups)

Element: Preliminary Design

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220102	Project Manager	12.00	HR	0.00	51.32	0.00	$615.86	☐
33220103	Office Manager	5.00	HR	0.00	56.83	0.00	$284.16	☐
33220105	Project Engineer	34.00	HR	0.00	49.77	0.00	$1,692.11	☐
33220106	Staff Engineer	82.00	HR	0.00	43.55	0.00	$3,571.26	☐
33220109	Staff Scientist	13.00	HR	0.00	42.70	0.00	$555.06	☐
33220110	QA/QC Officer	23.00	HR	0.00	41.97	0.00	$965.42	☐
33220113	Secretarial/ Administrative	18.00	HR	0.00	25.54	0.00	$459.77	☐
33220114	Word Processing/Clerical	34.00	HR	0.00	22.16	0.00	$753.40	☐
33220115	Draftsman/CADD	28.00	HR	0.00	28.97	0.00	$811.11	☐
33240101	Other Direct Costs	1.00	LS	49.51	0.00	0.00	$49.51	☑
				Total Element Cost			**$9,757.65**	

Element: Intermediate Design

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220102	Project Manager	16.00	HR	0.00	51.32	0.00	$821.15	☐
33220103	Office Manager	13.00	HR	0.00	56.83	0.00	$738.80	☐
33220105	Project Engineer	36.00	HR	0.00	49.77	0.00	$1,791.64	☐
33220106	Staff Engineer	77.00	HR	0.00	43.55	0.00	$3,353.50	☐

Phase Element Technology Cost Detail Report (without Markups)

Element: Intermediate Design

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220109	Staff Scientist	90.00	HR	0.00	42.70	0.00	$3,842.71	☐
33220110	QA/QC Officer	26.00	HR	0.00	41.97	0.00	$1,091.35	☐
33220111	Certified Industrial Hygienist	10.00	HR	0.00	53.26	0.00	$532.62	☐
33220113	Secretarial/ Administrative	13.00	HR	0.00	25.54	0.00	$332.06	☐
33220114	Word Processing/Clerical	26.00	HR	0.00	22.16	0.00	$576.13	☐
33220115	Draftsman/CADD	41.00	HR	0.00	28.97	0.00	$1,187.70	☐
33240101	Other Direct Costs	1.00	LS	72.77	0.00	0.00	$72.77	☑
				Total Element Cost			**$14,340.42**	

Element: Prefinal Design

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220102	Project Manager	13.00	HR	0.00	51.32	0.00	$667.18	☐
33220103	Office Manager	8.00	HR	0.00	56.83	0.00	$454.65	☐
33220105	Project Engineer	39.00	HR	0.00	49.77	0.00	$1,940.95	☐
33220106	Staff Engineer	115.00	HR	0.00	43.55	0.00	$5,008.47	☐
33220109	Staff Scientist	100.00	HR	0.00	42.70	0.00	$4,269.68	☐
33220110	QA/QC Officer	46.00	HR	0.00	41.97	0.00	$1,930.85	☐
33220111	Certified Industrial Hygienist	18.00	HR	0.00	53.26	0.00	$958.72	☐

Phase Element Technology Cost Detail Report (without Markups)

Element: Prefinal Design

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220113	Secretarial/ Administrative	18.00	HR	0.00	25.54	0.00	$459.77	☐
33220114	Word Processing/Clerical	36.00	HR	0.00	22.16	0.00	$797.71	☐
33220115	Draftsman/CADD	67.00	HR	0.00	28.97	0.00	$1,940.88	☐
33240101	Other Direct Costs	1.00	LS	140.98	0.00	0.00	$140.98	☑
				Total Element Cost			**$18,569.83**	

Element: Final Design

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220102	Project Manager	16.00	HR	0.00	51.32	0.00	$821.15	☐
33220103	Office Manager	11.00	HR	0.00	56.83	0.00	$625.14	☐
33220105	Project Engineer	52.00	HR	0.00	49.77	0.00	$2,587.93	☐
33220106	Staff Engineer	128.00	HR	0.00	43.55	0.00	$5,574.64	☐
33220109	Staff Scientist	97.00	HR	0.00	42.70	0.00	$4,141.59	☐
33220110	QA/QC Officer	52.00	HR	0.00	41.97	0.00	$2,182.69	☐
33220111	Certified Industrial Hygienist	21.00	HR	0.00	53.26	0.00	$1,118.50	☐
33220113	Secretarial/ Administrative	21.00	HR	0.00	25.54	0.00	$536.40	☐
33220114	Word Processing/Clerical	41.00	HR	0.00	22.16	0.00	$908.51	☐
33220115	Draftsman/CADD	72.00	HR	0.00	28.97	0.00	$2,085.72	☐

Phase Element Technology Cost Detail Report (without Markups)

Element: Final Design

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33240101	Other Direct Costs	1.00	LS	157.45	0.00	0.00	$157.45	☑
				Total Element Cost			**$20,739.73**	

Element: Bid Documents

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220102	Project Manager	4.00	HR	0.00	51.32	0.00	$205.29	☐
33220103	Office Manager	6.00	HR	0.00	56.83	0.00	$340.99	☐
33220105	Project Engineer	4.00	HR	0.00	49.77	0.00	$199.07	☐
33220106	Staff Engineer	4.00	HR	0.00	43.55	0.00	$174.21	☐
33220109	Staff Scientist	2.00	HR	0.00	42.70	0.00	$85.39	☐
33220110	QA/QC Officer	3.00	HR	0.00	41.97	0.00	$125.92	☐
33220111	Certified Industrial Hygienist	2.00	HR	0.00	53.26	0.00	$106.52	☐
33220113	Secretarial/ Administrative	10.00	HR	0.00	25.54	0.00	$255.43	☐
33220114	Word Processing/Clerical	9.00	HR	0.00	22.16	0.00	$199.43	☐
33240101	Other Direct Costs	1.00	LS	12.95	0.00	0.00	$12.95	☑
				Total Element Cost			**$1,705.20**	
				Total 1st Year Technology Cost			**$78,448.76**	

Cost Database Date: 2005

Cost Type: User-Defined

Print Date: 5/20/2005 3:48:06 PM

Phase Element Technology Cost Detail Report (without Markups)

Total Phase Element Cost	**$78,448.76**

Phase Element Technology Cost Detail Report (without Markups)

Folder: CTO 024 Rev May_05

Project

Name: CTO 024 NAF El Centro, CA IR Site 2 FS
ID: Navy Clean CTO 024 (23818-024)
Location: EL CENTRO, CALIFORNIA
Modifiers: **Material** 1.406
Labor 1.371
Equipment 1.083
Category: Feasibility Study
Report Option: Calendar Year
Description: The feasibility study consists of two alternatives. Alt 2 includes excavation, recycling of concrete ddebris, and off site disposal of remaining debris and waste and no longterm monitoring. Alt 3 includes recycling of concret debris, hot spot removal, off site disposal of surface debris and 5 years of water monitoring.

Site

Name: Alt 4 Hot Spot Removal \Off site Removal of Debris
ID: IR 2
Type: Contaminated Soil Removal
Description: Recycle concrete debris, hot spot removal Unit 1 and off site dispoasal of surface debris. (Rev 3/2005).
Program: N/A

Estimator Information:

Name: R Stark
Title: Project Estimator
Agency/Org./Office: *Bechtel National, Inc*
Business Address: PO Box 193965
San Fransisco, CA 94119-3965

Cost Database Date: 2005
Cost Type: User-Defined
Print Date: 5/20/2005 3:48:45 PM

Phase Element Technology Cost Detail Report (without Markups)

Phone: 415-768-2465
Email: rstark@bechtel.com
Prepared Date: 03/30/2005

Reviewer Information:
Name:
Title:
Agency/Org./Office:
Business Address:
Phone:
Email:
Date Reviewed:

Phase Element

Name: Asphalt Cover
Type: Remedial Action
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate
Approach: Ex Situ
Start Date: 1/1/2008
Description: Construct a 6 inch thick asphalt cap with 4" base at Unit 2 -9.6 acres (418,727 SF). Based material is recycled concrete

Media/Waste Type: Soil
Secondary Media/Waste Type: N/A
Contaminant: None
Secondary Contaminant: None
Markup Template: Navy Clean C (No SC Markup)
O&M Markup Template: N/A

Phase Element Technology Cost Detail Report (without Markups)

Technology: Parking Lots

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030102	Rough Grading, 12G, 1 Pass	51,177.75	SY	0.00	0.29	0.51	$41,285.09	☐
17030107	Fine Grading, 120G, 2 Passes	51,177.75	SY	0.00	0.12	0.14	$13,480.22	☐
17030510	Dry Roll Gravel, Steel Roller	46,541.89	SY	0.00	0.67	0.28	$44,494.05	☐
18010102	Gravel, Delivered & Dumped	5,171.32	CY	0.00	2.89	1.73	$23,867.71	☑
18010310	Prime Coat	46,541.89	SY	0.42	0.04	0.01	$21,576.82	☐
18010312	Asphalt Wearing Course, 1 Pass (Line Item Includes 5% Waste)	15,184.29	TON	43.54	7.04	2.41	$804,525.94	☐
				Total Element Cost			**$949,229.83**	
				Total 1st Year Technology Cost			**$949,229.83**	

Phase Element Technology Cost Detail Report (without Markups)

Technology: Professional Labor Management

Element: Professional Labor Percentage

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220138	Project Management Labor Cost	1.00	LS	0.00	18,984.60	0.00	$18,984.60	☑
33220139	Planning Documents Labor Cost	1.00	LS	0.00	18,984.60	0.00	$18,984.60	☑
33220140	Construction Oversight Labor Cost	1.00	LS	0.00	23,730.75	0.00	$23,730.75	☑
33220141	Reporting Labor Cost	1.00	LS	0.00	2,373.07	0.00	$2,373.07	☑
33220142	As-Built Drawings Labor Cost	1.00	LS	0.00	2,373.07	0.00	$2,373.07	☑
33220143	Public Notice Labor Cost	1.00	LS	0.00	3,796.92	0.00	$3,796.92	☑
33220144	Site Closure Activities Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220145	Permitting Labor Cost	1.00	LS	0.00	23,730.75	0.00	$23,730.75	☑
33220146	Responsible Party Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220147	Reimbursement Claims Preparation Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220148	Other Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐

Total Element Cost	**$93,973.77**
Total 1st Year Technology Cost	**$93,973.77**
Total Phase Element Cost	**$1,043,203.60**

Cost Database Date: 2005

Cost Type: User-Defined

Print Date: 5/20/2005 3:48:45 PM

Phase Element Technology Cost Detail Report (without Markups)

Folder: CTO 024 Rev May_05

Project

Name: CTO 024 NAF El Centro, CA IR Site 2 FS
ID: Navy Clean CTO 024 (23818-024)
Location: EL CENTRO, CALIFORNIA
Modifiers: **Material** 1.406
Labor 1.371
Equipment 1.083
Category: Feasibility Study
Report Option: Calendar Year
Description: The feasibility study consists of two alternatives. Alt 2 includes excavation, recycling of concrete ddebris, and off site disposal of remaining debris and waste and no longterm monitoring. Alt 3 includes recycling of concret debris, hot spot removal, off site disposal of surface debris and 5 years of water monitoring.

Site

Name: Alt 4 Hot Spot Removal \Off site Removal of Debris
ID: IR 2
Type: Contaminated Soil Removal
Description: Recycle concrete debris, hot spot removal Unit 1 and off site dispoasal of surface debris. (Rev 3/2005).
Program: N/A

Estimator Information:

Name: R Stark
Title: Project Estimator
Agency/Org./Office: Bechtel National, Inc
Business Address: PO Box 193965
San Fransisco, CA 94119-3965

Cost Database Date: 2005
Cost Type: User-Defined
Print Date: 5/20/2005 3:49:19 PM

Phase Element Technology Cost Detail Report (without Markups)

Phone: 415-768-2465
Email: rstark@bechtel.com

Prepared Date: 03/30/2005

Reviewer Information:
Name:
Title:
Agency/Org./Office:
Business Address:
Phone:
Email:
Date Reviewed:

Phase Element

Name:	Consolidate Unit 1 Debris and Excav Mat'l	**Media/Waste Type:**	Solids
Type:	Remedial Action	**Secondary Media/Waste Type:**	N/A
Labor Rate Group:	System Labor Rate	***Contaminant:***	None
Analysis Rate Group:	System Analysis Rate	**Secondary Contaminant:**	None
Approach:	Ex Situ	**Markup Template:**	Navy CleanB No Owner Cost
Start Date:	1/1/2008	**O&M Markup Template:**	N/A

Description: *Relocate debris north side of pit* (6,040cy) *and* excavate and relocate 30 cy from Unit 1 hot spot. Partial consilidation of surface debris with landfill waste at north end of Unit 2 landfill ravine (10,300 CY).

Phase Element Technology Cost Detail Report (without Markups)

Technology: Professional Labor Management

Element: Professional Labor Percentage

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220138	Project Management Labor Cost	1.00	LS	0.00	783.98	0.00	$783.98	☑
33220139	Planning Documents Labor Cost	1.00	LS	0.00	627.19	0.00	$627.19	☑
33220140	Construction Oversight Labor Cost	1.00	LS	0.00	509.59	0.00	$509.59	☑
33220141	Reporting Labor Cost	1.00	LS	0.00	117.60	0.00	$117.60	☑
33220142	As-Built Drawings Labor Cost	1.00	LS	0.00	117.60	0.00	$117.60	☑
33220143	Public Notice Labor Cost	1.00	LS	0.00	39.20	0.00	$39.20	☑
33220144	Site Closure Activities Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220145	Permitting Labor Cost	1.00	LS	0.00	783.98	0.00	$783.98	☑
33220146	Responsible Party Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220147	Reimbursement Claims Preparation Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220148	Other Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
					Total Element Cost		**$2,979.14**	
				Total 1st Year Technology Cost			**$2,979.14**	

Cost Database Date: 2005

Cost Type: User-Defined

Print Date: 5/20/2005 3:49:19 PM

Phase Element Technology Cost Detail Report (without Markups)

Technology: Excavation

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030277	Excavate and load, bank measure, medium material, 2 C.Y. bucket, hydraulic excavator	10,300.00	BCY	0.00	0.97	0.55	$15,679.69	☐

Total Element Cost	**$15,679.69**
Total 1st Year Technology Cost	**$15,679.69**
Total Phase Element Cost	**$18,658.83**

Phase Element Technology Cost Detail Report (without Markups)

Folder: CTO 024 Rev May_05

Project

Name: CTO 024 NAF El Centro, CA IR Site 2 FS
ID: Navy Clean CTO 024 (23818-024)
Location: EL CENTRO, CALIFORNIA
Modifiers: **Material** 1.406
Labor 1.371
Equipment 1.083
Category: Feasibility Study
Report Option: Calendar Year
Description: The feasibility study consists of two alternatives. Alt 2 includes excavation, recycling of concrete ddebris, and off site disposal of remaining debris and waste and no longterm monitoring. Alt 3 includes recycling of concret debris, hot spot removal, off site disposal of surface debris and 5 years of water monitoring.

Site

Name: Alt 4 Hot Spot Removal \Off site Removal of Debris
ID: IR 2
Type: Contaminated Soil Removal
Description: Recycle concrete debris, hot spot removal Unit 1 and off site dispoasal of surface debris. (Rev 3/2005).
Program: N/A

Estimator Information:

Name: R Stark
Title: Project Estimator
Agency/Org./Office: Bechtel National, Inc
Business Address: PO Box 193965
San Fransisco, CA 94119-3965

Phase Element Technology Cost Detail Report (without Markups)

Phone: 415-768-2465
Email: rstark@bechtel.com

Prepared Date: 03/30/2005

Reviewer Information:
Name:
Title:
Agency/Org./Office:
Business Address:
Phone:
Email:
Date Reviewed:

Phase Element

Name:	Cover Unit 1	**Media/Waste Type:**	Soil
Type:	Remedial Action	**Secondary Media/Waste Type:**	N/A
Labor Rate Group:	System Labor Rate	**Contaminant:**	None
Analysis Rate Group:	System Analysis Rate	**Secondary Contaminant:**	None
Approach:	Ex Situ	**Markup Template:**	Navy Clean C (No SC Markup no profit
Start Date:	1/1/2008	**O&M Markup Template:**	N/A

Description: cover Unit 1 with 1 foot of soil excavated on site and hauled 2 miles.

Phase Element Technology Cost Detail Report (without Markups)

Technology: Excavation

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030422	Unclassified Fill, 6" Lifts, On-Site, Includes Spreading and Compaction	18,200.00	CY	0.30	2.85	2.83	$108,801.42	☑
33170803	Spray washing, decontaminate heavy equipment, decontaminate heavy equipment	1.00	EA	0.00	382.81	0.00	$382.81	☐
				Total Element Cost			**$109,184.23**	
				Total 1st Year Technology Cost			**$109,184.23**	

Phase Element Technology Cost Detail Report (without Markups)

Technology: Professional Labor Management

Element: Professional Labor Percentage

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220138	Project Management Labor Cost	1.00	LS	0.00	1,600.07	0.00	$1,600.07	☑
33220139	Planning Documents Labor Cost	1.00	LS	0.00	1,600.07	0.00	$1,600.07	☑
33220140	Construction Oversight Labor Cost	1.00	LS	0.00	4,400.19	0.00	$4,400.19	☑
33220141	Reporting Labor Cost	1.00	LS	0.00	6,000.25	0.00	$6,000.25	☑
33220142	As-Built Drawings Labor Cost	1.00	LS	0.00	5,600.24	0.00	$5,600.24	☑
33220143	Public Notice Labor Cost	1.00	LS	0.00	1,280.05	0.00	$1,280.05	☑
33220144	Site Closure Activities Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220145	Permitting Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220146	Responsible Party Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220147	Reimbursement Claims Preparation Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220148	Other Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
					Total Element Cost		**$20,480.87**	
				Total 1st Year Technology Cost			**$20,480.87**	

Cost Database Date: 2005

Cost Type: User-Defined

Print Date: 5/20/2005 3:49:56 PM

Phase Element Technology Cost Detail Report (without Markups)

Technology: Load and Haul

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030226	988, 7.0 CY, Wheel Loader	77.00	HR	0.00	45.19	169.19	$16,506.93	☐
17030289	32 CY, Semi Dump	308.00	HR	0.00	35.66	75.76	$34,315.64	☐
					Total Element Cost		**$50,822.56**	
					Total 1st Year Technology Cost		**$50,822.56**	
					Total Phase Element Cost		**$180,487.66**	

Phase Element Technology Cost Detail Report (without Markups)

Folder: CTO 024 Rev May_05

Project

Name: *CTO 024 NAF El Centro, CA IR Site 2 FS*
ID: Navy Clean CTO 024 (23818-024)
Location: EL CENTRO, CALIFORNIA
Modifiers: **Material** *1.406*
Labor 1.371
Equipment 1.083
Category: *Feasibility Study*
Report Option: Calendar Year
Description: The feasibility study consists of two alternatives. Alt 2 includes excavation, recycling of concrete ddebris, and off site disposal of remaining debris and waste and no longterm monitoring. Alt 3 includes recycling of concret debris, hot spot removal, off site disposal of surface debris and 5 years of water monitoring.

Site

Name: Alt 4 Hot Spot Removal \Off site Removal of Debris
ID: IR 2
Type: Contaminated Soil Removal
Description: Recycle concrete debris, hot spot removal Unit 1 and off site dispoasal of surface debris. (Rev 3/2005).
Program: N/A

Estimator Information:
Name: R Stark
Title: Project Estimator
Agency/Org./Office: Bechtel National, Inc
Business Address: PO Box 193965
San Fransisco, CA 94119-3965

Cost Database Date: 2005
Cost Type: User-Defined
Print Date: 5/20/2005 3:50:35 PM

Phase Element Technology Cost Detail Report (without Markups)

Phone: 415-768-2465
Email: rstark@bechtel.com

Prepared Date: 03/30/2005

Reviewer Information:
Name:
Title:
Agency/Org./Office:
Business Address:
Phone:
Email:
Date Reviewed:

Phase Element

Name: *Decon Facility*
Type: Remedial Action
Labor Rate Group: System Labor Rate
Analysis Rate Group: Navy Clean CTO 024 Rates (Rev1)
Approach: Ex Situ
Start Date: 1/1/2008
Description: Decon facility to clean equipment

Media/Waste Type: N/A
Secondary Media/Waste Type: N/A
Contaminant: None
Secondary Contaminant: None
Markup Template: Navy CleanB No Owner Cost
O&M Markup Template: N/A

Phase Element Technology Cost Detail Report (without Markups)

Technology: Decontamination Facilities

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030109	Pad Subgrade Preparation	133.33	CY	0.00	5.23	1.26	$865.50	☐
17030257	Excavating, trench, medium soil, 4' to 6' deep, 1 C.Y. bucket, gradall, excludes sheeting or dewatering	2.49	BCY	0.00	0.75	0.28	$2.58	☐
17030501	Compaction, subgrade, 18" wide, 8" lifts, walk behind, vibrating plate	133.33	ECY	0.00	2.30	0.13	$323.58	☐
17030510	Dry Roll Gravel, Steel Roller	200.00	SY	0.00	0.67	0.28	$191.20	☐
18010102	Gravel, Delivered & Dumped	55.56	CY	28.98	2.89	1.73	$1,866.45	☐
18010103	Gravel (90%) & Sand Base (10%), with Calcium Chloride 3/4 - 1 Lb/CY	55.56	CY	23.26	2.91	2.23	$1,577.52	☐
18010201	Concrete Curb, 6" x 6"	166.00	LF	1.48	1.67	0.01	$524.54	☐
18020203	26" x 26", 5' Deep Area Drain with Grate	1.00	EA	1,314.62	2,029.46	45.89	$3,389.98	☐
18020321	6" Structural Slab on Grade	1,500.00	SF	3.44	3.42	0.07	$10,396.50	☐
19020313	5' x 5' x 5' Reinforced Concrete Sump	1.00	EA	1,799.05	3,334.90	54.11	$5,188.07	☐
19020604	12" x 12" CIP Concrete In-Ground Trench Drain with Metal Grate	28.00	LF	52.76	65.87	0.32	$3,330.40	☐

Phase Element Technology Cost Detail Report (without Markups)

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
19040606	Storage Tanks, steel, above ground, single wall, 5,000 gallon, incl. cradles, coating & fittings, excl. foundation, pumps or piping	1.00	EA	5,964.25	757.89	0.00	$6,722.15	☐
33080503	Polymeric Liner Anchor Trench, 3' x 1.5'	199.20	LF	0.05	1.94	0.27	$448.68	☐
33080532	8 oz/sy Erosion Control/Drainage Filter Fabric (80 Mil)	200.00	SY	1.00	0.68	0.03	$342.04	☐
33080571	Secure burial cell construction, polymeric liner and cover system, rough textured H.D. polyethylene (HDPE), 40 mil	1,800.00	SF	0.42	0.22	0.01	$1,174.68	☐
33170818	Spray washers, cold water, electric, 1800 psi, 5 GPM, 5 HP, rent/month	4.00	MO	1,557.10	0.00	0.00	$6,228.41	☐
33170823	Operation of Pressure Washer, Including Water, Soap, Electricity, Labor	160.00	HR	9.27	65.69	0.00	$11,993.01	☐
33231306	High Sump Level Switch for Avoiding Overflow	1.00	EA	305.38	219.13	0.00	$524.51	☐
33260623	(2 1/2", 4") PVC Double-wall Piping, with Fittings	30.00	LF	30.14	33.52	0.00	$1,909.73	☐

Phase Element Technology Cost Detail Report (without Markups)

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33290401	Pump, pedestal sump, single stage, 25 GPM, 1 H.P., 1-1/2" discharge	1.00	EA	3,169.12	641.82	0.00	$3,810.95	☐

Total Element Cost	**$60,810.48**
Total 1st Year Technology Cost	**$60,810.48**
Total Phase Element Cost	**$60,810.48**

Phase Element Technology Cost Detail Report (without Markups)

Folder: CTO 024 Rev May_05

Project

Name: CTO 024 NAF El Centro, CA IR Site 2 FS
ID: Navy Clean CTO 024 (23818-024)
Location: EL CENTRO, CALIFORNIA
Modifiers: **Material** 1.406
Labor 1.371
Equipment 1.083
Category: Feasibility Study
Report Option: Calendar Year
Description: The feasibility study consists of two alternatives. Alt 2 includes excavation, recycling of concrete ddebris, and off site disposal of remaining debris and waste and no longterm monitoring. Alt 3 includes recycling of concret debris, hot spot removal, off site disposal of surface debris and 5 years of water monitoring.

Site

Name: Alt 4 Hot Spot Removal \Off site Removal of Debris
ID: IR 2
Type: Contaminated Soil Removal
Description: Recycle concrete debris, hot spot removal Unit 1 and off site dispoasal of surface debris. (Rev 3/2005).
Program: N/A

Estimator Information:
Name: R Stark
Title: Project Estimator
Agency/Org./Office: Bechtel National, Inc
Business Address: PO Box 193965
San Fransisco, CA 94119-3965

Cost Database Date: 2005
Cost Type: User-Defined
Print Date: 5/20/2005 3:51:13 PM

Phase Element Technology Cost Detail Report (without Markups)

Phone: 415-768-2465
Email: rstark@bechtel.com

Prepared Date: 03/30/2005

Reviewer Information:
Name:
Title:
Agency/Org./Office:
Business Address:
Phone:
Email:
Date Reviewed:

Phase Element

Name: Demo Monitoring Wells
Type: Remedial Action
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate
Approach: Ex Situ
Start Date: 1/1/2008
Description: Demo 9-2" dia x 25' wells and 2" dia x 50' wells

Media/Waste Type: N/A
Secondary Media/Waste Type: N/A
Contaminant: None
Secondary Contaminant: None
Markup Template: Navy CleanB No Owner Cost
O&M Markup Template: N/A

Phase Element Technology Cost Detail Report (without Markups)

Technology: DEMO MONITORING WELLS

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
95011201	Allowance	1.00	LS	1,700.00	1,000.00	2,900.00	$5,600.00	☑
				Total Element Cost			**$5,600.00**	
				Total 1st Year Technology Cost			**$5,600.00**	
				Total Phase Element Cost			**$5,600.00**	

Phase Element Technology Cost Detail Report (without Markups)

Folder: CTO 024 Rev May_05

Project

Name: CTO 024 NAF El Centro, CA IR Site 2 FS
ID: Navy Clean CTO 024 (23818-024)
Location: EL CENTRO, CALIFORNIA
Modifiers: **Material** 1.406
Labor 1.371
Equipment 1.083
Category: Feasibility Study
Report Option: Calendar Year
Description: The feasibility study consists of two alternatives. Alt 2 includes excavation, recycling of concrete ddebris, and off site disposal of remaining debris and waste and no longterm monitoring. Alt 3 includes recycling of concret debris, hot spot removal, off site disposal of surface debris and 5 years of water monitoring.

Site

Name: Alt 4 Hot Spot Removal \Off site Removal of Debris
ID: IR 2
Type: Contaminated Soil Removal
Description: Recycle concrete debris, hot spot removal Unit 1 and off site dispoasal of surface debris. (Rev 3/2005).
Program: N/A

Estimator Information:

Name: R Stark
Title: Project Estimator
Agency/Org./Office: Bechtel National, Inc
Business Address: PO Box 193965
San Fransisco, CA 94119-3965

Phase Element Technology Cost Detail Report (without Markups)

Phone: 415-768-2465
Email: rstark@bechtel.com

Prepared Date: 03/30/2005

Reviewer Information:
Name:
Title:
Agency/Org./Office:
Business Address:
Phone:
Email:
Date Reviewed:

Phase Element

Name:	Haul debris off-site	**Media/Waste Type:**	Solids
Type:	Remedial Action	**Secondary Media/Waste Type:**	N/A
Labor Rate Group:	System Labor Rate	**Contaminant:**	None
Analysis Rate Group:	Navy Clean CTO 069 Rates	**Secondary Contaminant:**	None
Approach:	Ex Situ	**Markup Template:**	Navy Clean C (No SC Markup)
Start Date:	1/1/2008	**O&M Markup Template:**	N/A

Description: Haul 21,200 cy to Class II landfill (110 miles one way) and 4,000 cy to class 1 landfill 400 miles one way

Phase Element Technology Cost Detail Report (without Markups)

Technology: Load and Haul

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17020401	Dump Charges	21,200.00	CY	30.00	0.00	0.00	$636,000.00	☑
17030226	988, 7.0 CY, Wheel Loader	68.00	HR	0.00	55.11	169.19	$15,252.07	☐
17030289	32 CY, Semi Dump	4,747.00	HR	0.00	43.49	75.76	$566,042.25	☐
				Total Element Cost			**$1,217,294.32**	
				Total 1st Year Technology Cost			**$1,217,294.32**	

Phase Element Technology Cost Detail Report (without Markups)

Technology: Professional Labor Management

Element: Professional Labor Percentage

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220138	Project Management Labor Cost	1.00	LS	0.00	19,725.75	0.00	$19,725.75	☑
33220139	Planning Documents Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220140	Construction Oversight Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220141	Reporting Labor Cost	1.00	LS	0.00	4,931.44	0.00	$4,931.44	☑
33220142	As-Built Drawings Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220143	Public Notice Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220144	Site Closure Activities Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220145	Permitting Labor Cost	1.00	LS	0.00	24,657.19	0.00	$24,657.19	☑
33220146	Responsible Party Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220147	Reimbursement Claims Preparation Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220148	Other Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
				Total Element Cost			**$49,314.38**	
				Total 1st Year Technology Cost			**$49,314.38**	

Phase Element Technology Cost Detail Report (without Markups)

Technology: Off-site Transportation and Waste Disposal

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33190102	Bulk Solid Hazardous Waste Loading Into Truck	4,000.00	CY	0.00	1.05	1.65	$10,792.40	☐
33190311	Commercial RCRA landfills, truck washout	200.00	EA	222.44	0.00	0.00	$44,488.66	☐
33197264	Commercial RCRA landfills, bulk waste, solid, less than 2,000 lb/CY	4,000.00	CY	175.00	0.00	0.00	$700,000.00	☑
					Total Element Cost		**$755,281.06**	
					Total 1st Year Technology Cost		**$755,281.06**	
					Total Phase Element Cost		**$2,021,889.76**	

Phase Element Technology Cost Detail Report (without Markups)

Folder: CTO 024 Rev May_05

Project

Name: CTO 024 NAF El Centro, CA IR Site 2 FS
ID: Navy Clean CTO 024 (23818-024)
Location: EL CENTRO, CALIFORNIA
Modifiers: **Material** 1.406
Labor 1.371
Equipment 1.083
Category: Feasibility Study
Report Option: Calendar Year
Description: The feasibility study consists of two alternatives. Alt 2 includes excavation, recycling of concrete ddebris, and off site disposal of remaining debris and waste and no longterm monitoring. Alt 3 includes recycling of concret debris, hot spot removal, off site disposal of surface debris and 5 years of water monitoring.

Site

Name: Alt 4 Hot Spot Removal \Off site Removal of Debris
ID: IR 2
Type: Contaminated Soil Removal
Description: Recycle concrete debris, hot spot removal Unit 1 and off site dispoasal of surface debris. (Rev 3/2005).
Program: N/A

Estimator Information:
Name: R Stark
Title: Project Estimator
Agency/Org./Office: Bechtel National, Inc
Business Address: PO Box 193965
San Fransisco, CA 94119-3965

Phase Element Technology Cost Detail Report (without Markups)

Phone: 415-768-2465
Email: rstark@bechtel.com
Prepared Date: 03/30/2005

Reviewer Information:
Name:
Title:
Agency/Org./Office:
Business Address:
Phone:
Email:
Date Reviewed:

Phase Element

Name: Monitoring Wells
Type: Remedial Action
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate
Approach: Ex Situ
Start Date: 1/1/2008
Description: Install 2 -2" x 30' wells w/10 screen

Media/Waste Type: Groundwater
Secondary Media/Waste Type: N/A
Contaminant: None
Secondary Contaminant: None
Markup Template: Navy CleanB No Owner Cost
O&M Markup Template: N/A

Phase Element Technology Cost Detail Report (without Markups)

Technology: Groundwater Monitoring Well

Element: Aquifer 1

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33020303	Organic Vapor Analyzer Rental, per Day	1.00	DAY	161.20	0.00	0.00	$161.20	☐
33170808	Decontaminate Rig, Augers, Screen (Rental Equipment)	1.00	DAY	23.48	525.50	0.00	$548.98	☐
33220112	Field Technician	16.00	HR	0.00	38.79	0.00	$620.66	☐
33230101	2" PVC, Schedule 40, Well Casing	40.00	LF	1.58	3.78	7.33	$507.85	☐
33230201	2" PVC, Schedule 40, Well Screen	20.00	LF	3.66	4.88	9.46	$359.85	☐
33230301	2" PVC, Well Plug	2.00	EA	7.71	5.67	11.00	$48.75	☐
33231101	Hollow Stem Auger, 8" Dia Borehole, Depth <= 100 ft	62.00	LF	0.00	10.36	20.11	$1,889.13	☐
33231173	Split Spoon Sampling	14.00	LF	0.00	16.20	31.42	$666.68	☐
33231182	DOT steel drums, 55 gal., open, 17C	4.00	EA	115.32	0.00	0.00	$461.28	☐
33231401	2" Screen, Filter Pack	24.00	LF	4.11	3.21	6.23	$325.38	☐
33231811	2" Well, Portland Cement Grout	34.00	LF	1.53	0.00	0.00	$52.07	☐
33232101	2" Well, Bentonite Seal	2.00	EA	12.22	12.75	24.75	$99.45	☐
				Total Element Cost			**$5,741.30**	

Cost Database Date: 2005

Cost Type: User-Defined

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Phase Element Technology Cost Detail Report (without Markups)

Element: General Aquifers

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33010101	Mobilize/DeMobilize Drilling Rig & Crew	1.00	LS	0.00	1,346.61	996.44	$2,343.05	☐
33231504	Surface Pad, Concrete, 2' x 2' x 4"	2.00	EA	51.04	17.71	1.81	$141.13	☐
					Total Element Cost		**$2,484.18**	
					Total 1st Year Technology Cost		**$8,225.48**	

Phase Element Technology Cost Detail Report (without Markups)

Technology: Professional Labor Management

Element: Professional Labor Percentage

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220138	Project Management Labor Cost	1.00	LS	0.00	411.27	0.00	$411.27	☑
33220139	Planning Documents Labor Cost	1.00	LS	0.00	329.02	0.00	$329.02	☑
33220140	Construction Oversight Labor Cost	1.00	LS	0.00	267.33	0.00	$267.33	☑
33220141	Reporting Labor Cost	1.00	LS	0.00	61.69	0.00	$61.69	☑
33220142	As-Built Drawings Labor Cost	1.00	LS	0.00	61.69	0.00	$61.69	☑
33220143	Public Notice Labor Cost	1.00	LS	0.00	20.56	0.00	$20.56	☑
33220144	Site Closure Activities Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220145	Permitting Labor Cost	1.00	LS	0.00	411.27	0.00	$411.27	☑
33220146	Responsible Party Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220147	Reimbursement Claims Preparation Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220148	Other Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐

Total Element Cost	**$1,562.84**
Total 1st Year Technology Cost	**$1,562.84**
Total Phase Element Cost	**$9,788.32**

Phase Element Technology Cost Detail Report (without Markups)

Folder: CTO 024 Rev May_05

Project

Name: CTO 024 NAF El Centro, CA IR Site 2 FS
ID: Navy Clean CTO 024 (23818-024)
Location: EL CENTRO, CALIFORNIA
Modifiers: **Material** 1.406
Labor 1.371
Equipment 1.083
Category: *Feasibility Study*
Report Option: Calendar Year
Description: The feasibility study consists of two alternatives. Alt 2 includes excavation, recycling of concrete ddebris, and off site disposal of remaining debris and waste and no longterm monitoring. Alt 3 includes recycling of concret debris, hot spot removal, off site disposal of surface debris and 5 years of water monitoring.

Site

Name: Alt 4 Hot Spot Removal \Off site Removal of Debris
ID: IR 2
Type: Contaminated Soil Removal
Description: Recycle concrete debris, hot spot removal Unit 1 and off site dispoasal of surface debris. (Rev 3/2005).
Program: N/A

Estimator Information:
Name: R Stark
Title: Project Estimator
Agency/Org./Office: Bechtel National, Inc
Business Address: PO Box 193965
San Fransisco, CA 94119-3965

Cost Database Date: 2005
Cost Type: User-Defined
Print Date: 5/20/2005 3:52:59 PM

Phase Element Technology Cost Detail Report (without Markups)

Phone: 415-768-2465
Email: rstark@bechtel.com

Prepared Date: 03/30/2005

Reviewer Information:
Name:
Title:
Agency/Org./Office:
Business Address:
Phone:
Email:
Date Reviewed:

Phase Element

Name:	Recycle Concrete Debris	**Media/Waste Type:**	N/A
Type:	Remedial Action	**Secondary Media/Waste Type:**	N/A
Labor Rate Group:	System Labor Rate	**Contaminant:**	None
Analysis Rate Group:	System Analysis Rate	**Secondary Contaminant:**	None
Approach:	Ex Situ	**Markup Template:**	Navy Clean C (No SC Markup)
Start Date:	1/1/2008	**O&M Markup Template:**	N/A

Description: Screen 35,800 cy of debris for concrete to be recycled and recyle 14,300 cy. (Rev May 05)

Phase Element Technology Cost Detail Report (without Markups)

Technology: RECYCLE CONCRETE

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
95011004	*Crush Demolished Concrete no Reinf*	*14,300.00*	*CY*	*17.40*	*0.00*	*0.00*	$248,820.00	☑
				Total Element Cost			**$248,820.00**	
				Total 1st Year Technology Cost			**$248,820.00**	

Phase Element Technology Cost Detail Report (without Markups)

Technology: Professional Labor Management

Element: Professional Labor Percentage

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220138	Project Management Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220139	Planning Documents Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220140	*Construction Oversight Labor Cost*	1.00	LS	0.00	2,488.20	0.00	$2,488.20	☑
33220141	Reporting Labor Cost	1.00	LS	0.00	1,244.10	0.00	$1,244.10	☑
33220142	As-Built Drawings Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220143	Public Notice Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220144	Site Closure Activities Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220145	Permitting Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220146	Responsible Party Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220147	Reimbursement Claims Preparation Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220148	Other Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐

Total Element Cost	**$3,732.30**
Total 1st Year Technology Cost	**$3,732.30**
Total Phase Element Cost	**$252,552.30**

Cost Database Date: 2005

Cost Type: User-Defined

Print Date: 5/20/2005 3:52:59 PM

Phase Element Technology Cost Detail Report (without Markups)

Folder: CTO 024 Rev May_05

Project

Name: CTO 024 NAF El Centro, CA IR Site 2 FS
ID: Navy Clean CTO 024 (23818-024)
Location: EL CENTRO, CALIFORNIA
Modifiers: **Material** 1.406
Labor 1.371
Equipment 1.083
Category: Feasibility Study
Report Option: Calendar Year
Description: The feasibility study consists of two alternatives. Alt 2 includes excavation, recycling of concrete ddebris, and off site disposal of remaining debris and waste and no longterm monitoring. Alt 3 includes recycling of concret debris, hot spot removal, off site disposal of surface debris and 5 years of water monitoring.

Site

Name: Alt 4 Hot Spot Removal \Off site Removal of Debris
ID: IR 2
Type: Contaminated Soil Removal
Description: Recycle concrete debris, hot spot removal Unit 1 and off site dispoasal of surface debris. (Rev 3/2005).
Program: N/A

Estimator Information:
Name: R Stark
Title: Project Estimator
Agency/Org./Office: Bechtel National, Inc
Business Address: PO Box 193965
San Fransisco, CA 94119-3965

Phase Element Technology Cost Detail Report (without Markups)

Phone: 415-768-2465
Email: rstark@bechtel.com

Prepared Date: 03/30/2005

Reviewer Information:
Name:
Title:
Agency/Org./Office:
Business Address:
Phone:
Email:
Date Reviewed:

Phase Element

Name: Soil Confirmation
Type: Remedial Action
Labor Rate Group: System Labor Rate
Analysis Rate Group: Navy Clean CTO 024 Rates (Rev1)
Approach: Ex Situ
Start Date: 1/1/2008
Description: *Soil confirmation following excavation for 17.6 Acres.*

Media/Waste Type: Solids
Secondary Media/Waste Type: N/A
Contaminant: None
Secondary Contaminant: None
Markup Template: Navy CleanB No Owner Cost
O&M Markup Template: N/A

Phase Element Technology Cost Detail Report (without Markups)

Technology: Site Inspection

Element: Planning

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220102	*Project Manager*	5.00	HR	0.00	62.59	0.00	$312.94	☐
33220109	Staff Scientist	16.00	HR	0.00	52.07	0.00	$833.11	☐
33240101	Other Direct Costs	1.00	LS	21.40	0.00	0.00	$21.40	☑
				Total Element Cost			**$1,167.44**	

Element: Sampling and Analysis

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33010104	Sample collection, vehicle mileage charge, car or van	270.00	MI	0.23	0.00	0.00	$60.75	☐
33010202	Sample collection, sampling personnel travel, per diem	2.00	DAY	86.00	0.00	0.00	$172.00	☑
33020343	Photo-Ionization Detector, HnU, Weekly Rental	1.00	WK	483.61	0.00	0.00	$483.61	☐
33020401	*Disposable Materials per Sample*	36.00	EA	11.71	0.00	0.00	$421.62	☐
33020402	Decontamination Materials per Sample	36.00	EA	10.43	0.00	0.00	$375.57	☐
33020603	Surface Soil Sampling Equipment	1.00	EA	520.19	0.00	0.00	$520.19	☐
33021709	Testing, TAL metals (6010/7000s)	49.00	EA	209.00	0.00	0.00	$10,241.00	☑

Phase Element Technology Cost Detail Report (without Markups)

Element: Sampling and Analysis

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33021717	Pesticides/PCBs (SW 3550B/SW 8081/8082), Soil Analysis	43.00	EA	182.00	0.00	0.00	$7,826.00	☑
33029533	SVOC's (EPA8270C) (7.3)	43.00	LS	274.00	0.00	0.00	$11,782.00	☑
33220112	Field Technician	32.00	HR	0.00	38.79	0.00	$1,241.32	☐
				Total Element Cost			**$33,124.07**	
				Total 1st Year Technology Cost			**$34,291.52**	

Phase Element Technology Cost Detail Report (without Markups)

Technology: Professional Labor Management

Element: Professional Labor Percentage

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220138	Project Management Labor Cost	1.00	LS	0.00	1,714.58	0.00	$1,714.58	☑
33220139	Planning Documents Labor Cost	1.00	LS	0.00	1,371.66	0.00	$1,371.66	☑
33220140	Construction Oversight Labor Cost	1.00	LS	0.00	1,114.47	0.00	$1,114.47	☑
33220141	Reporting Labor Cost	1.00	LS	0.00	257.19	0.00	$257.19	☑
33220142	As-Built Drawings Labor Cost	1.00	LS	0.00	257.19	0.00	$257.19	☑
33220143	Public Notice Labor Cost	1.00	LS	0.00	85.73	0.00	$85.73	☑
33220144	Site Closure Activities Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220145	Permitting Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220146	Responsible Party Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220147	Reimbursement Claims Preparation Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220148	Other Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐

Total Element Cost	**$4,800.81**
Total 1st Year Technology Cost	**$4,800.81**
Total Phase Element Cost	**$39,092.33**

Phase Element Technology Cost Detail Report (without Markups)

Folder: CTO 024 Rev May_05

Project

Name: CTO 024 NAF El Centro, CA IR Site 2 FS
ID: Navy Clean CTO 024 (23818-024)
Location: EL CENTRO, CALIFORNIA
Modifiers: **Material** 1.406
Labor 1.371
Equipment 1.083
Category: Feasibility Study
Report Option: Calendar Year
Description: The feasibility study consists of two alternatives. Alt 2 includes excavation, recycling of concrete ddebris, and off site disposal of remaining debris and waste and no longterm monitoring. Alt 3 includes recycling of concret debris, hot spot removal, off site disposal of surface debris and 5 years of water monitoring.

Site

Name: Alt 4 Hot Spot Removal \Off site Removal of Debris
ID: IR 2
Type: Contaminated Soil Removal
Description: Recycle concrete debris, hot spot removal Unit 1 and off site dispoasal of surface debris. (Rev 3/2005).
Program: N/A

Estimator Information:
Name: R Stark
Title: Project Estimator
Agency/Org./Office: Bechtel National, Inc
Business Address: PO Box 193965
San Fransisco, CA 94119-3965

Cost Database Date: 2005
Cost Type: User-Defined
Print Date: 5/20/2005 3:54:12 PM

Phase Element Technology Cost Detail Report (without Markups)

Phone: 415-768-2465
Email: rstark@bechtel.com

Prepared Date: 03/30/2005

Reviewer Information:
Name:
Title:
Agency/Org./Office:
Business Address:
Phone:
Email:
Date Reviewed:

Phase Element

Name:	Waste Profiling	**Media/Waste Type:**	Solids
Type:	Remedial Action	**Secondary Media/Waste Type:**	N/A
Labor Rate Group:	System Labor Rate	**Contaminant:**	None
Analysis Rate Group:	Navy Clean CTO 024 Rates (Rev1)	**Secondary Contaminant:**	None
Approach:	Ex Situ	**Markup Template:**	Navy CleanB No Owner Cost
Start Date:	1/1/2008	**O&M Markup Template:**	N/A
Description:	Waste profiling (1 sample/500 cy) during excavation and debris removal 25,600 cy.		

Phase Element Technology Cost Detail Report (without Markups)

Technology: Site Inspection

Element: Planning

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220102	Project Manager	5.00	HR	0.00	62.59	0.00	$312.94	☐
33220109	Staff Scientist	16.00	HR	0.00	52.07	0.00	$833.11	☐
33240101	Other Direct Costs	1.00	LS	22.92	0.00	0.00	$22.92	☑
			Total Element Cost				**$1,168.97**	

Element: Sampling and Analysis

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33010104	Sample collection, vehicle mileage charge, car or van	270.00	MI	0.23	0.00	0.00	$60.75	☐
33010202	Sample collection, sampling personnel travel, per diem	4.00	DAY	86.00	0.00	0.00	$344.00	☑
33020343	Photo-Ionization Detector, HnU, Weekly Rental	1.00	WK	483.61	0.00	0.00	$483.61	☐
33020401	Disposable Materials per Sample	60.00	EA	11.71	0.00	0.00	$702.71	☐
33020402	Decontamination Materials per Sample	60.00	EA	10.43	0.00	0.00	$625.95	☐
33020603	Surface Soil Sampling Equipment	1.00	EA	520.19	0.00	0.00	$520.19	☐
33021709	Testing, TAL metals (6010/7000s)	60.00	EA	209.00	0.00	0.00	$12,540.00	☑

Phase Element Technology Cost Detail Report (without Markups)

Element: Sampling and Analysis

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33021717	Pesticides/PCBs (SW 3550B/SW 8081/8082), Soil Analysis	60.00	EA	182.00	0.00	0.00	$10,920.00	☑
33029522	Pesticides/PCB's EPA 8081A/8082 (3.3)	60.00	LS	236.00	0.00	0.00	$14,160.00	☑
33029529	VOC's (EPA 8260B) (6.5)	60.00	LS	165.00	0.00	0.00	$9,900.00	☑
33029533	SVOC's (EPA8270C) (7.3)	60.00	LS	274.00	0.00	0.00	$16,440.00	☑
33029535	TCLP Metals	60.00	LS	161.00	0.00	0.00	$9,660.00	☑
33029540	TCLP VOC	60.00	LS	242.00	0.00	0.00	$14,520.00	☑
33029541	TCLP SVOC's	60.00	LS	332.00	0.00	0.00	$19,920.00	☑
33220112	Field Technician	200.00	HR	0.00	38.79	0.00	$7,758.28	☐
				Total Element Cost			**$118,555.49**	
				Total 1st Year Technology Cost			**$119,724.46**	

Phase Element Technology Cost Detail Report (without Markups)

Technology: Professional Labor Management

Element: Professional Labor Percentage

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220138	Project Management Labor Cost	1.00	LS	0.00	4,788.98	0.00	$4,788.98	☑
33220139	Planning Documents Labor Cost	1.00	LS	0.00	4,190.36	0.00	$4,190.36	☑
33220140	Construction Oversight Labor Cost	1.00	LS	0.00	3,591.73	0.00	$3,591.73	☑
33220141	Reporting Labor Cost	1.00	LS	0.00	419.04	0.00	$419.04	☑
33220142	As-Built Drawings Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220143	Public Notice Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220144	Site Closure Activities Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220145	Permitting Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220146	Responsible Party Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220147	Reimbursement Claims Preparation Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220148	Other Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐

Total Element Cost	**$12,990.10**
Total 1st Year Technology Cost	**$12,990.10**
Total Phase Element Cost	**$132,714.56**

Cost Database Date: 2005

Cost Type: User-Defined

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Phase Element Technology Cost Detail Report (without Markups)

Folder: CTO 024 Rev May_05

Project

Name: CTO 024 NAF El Centro, CA IR Site 2 FS
ID: Navy Clean CTO 024 (23818-024)
Location: EL CENTRO, CALIFORNIA
Modifiers: **Material** 1.406
Labor 1.371
Equipment 1.083
Category: *Feasibility Study*
Report Option: Calendar Year
Description: The feasibility study consists of two alternatives. Alt 2 includes excavation, recycling of concrete ddebris, and off site disposal of remaining debris and waste and no longterm monitoring. Alt 3 includes recycling of concret debris, hot spot removal, off site disposal of surface debris and 5 years of water monitoring.

Site

Name: Alt 4 Hot Spot Removal \Off site Removal of Debris
ID: IR 2
Type: Contaminated Soil Removal
Description: Recycle concrete debris, hot spot removal Unit 1 and off site dispoasal of surface debris. (Rev 3/2005).
Program: N/A

Estimator Information:
Name: R Stark
Title: Project Estimator
Agency/Org./Office: Bechtel National, Inc
Business Address: PO Box 193965
San Fransisco, CA 94119-3965

Cost Database Date: 2005
Cost Type: User-Defined
Print Date: 5/20/2005 3:54:52 PM

Phase Element Technology Cost Detail Report (without Markups)

Phone: 415-768-2465
Email: rstark@bechtel.com

Prepared Date: 03/30/2005

Reviewer Information:
Name:
Title:
Agency/Org./Office:
Business Address:
Phone:
Email:
Date Reviewed:

Phase Element

Name:	Monitoring 5 Year	**Media/Waste Type:**	Groundwater
Type:	Long Term Monitoring	**Secondary Media/Waste Type:**	N/A
Labor Rate Group:	System Labor Rate	**Contaminant:**	None
Analysis Rate Group:	Navy Clean CTO 024 Rates (Rev1)	**Secondary Contaminant:**	None
Approach:	None	**Markup Template:**	Navy CleanB No Owner Cost
Start Date:	1/1/2008	**O&M Markup Template:**	N/A

Description: *Monitor 4 wells quarterly for 5 years.* Water level measured quarterly for 5 years. Two Water level measurements are taken w/ the quarterly sampling. Additonal Svoc's and pesticide sampling taken only in year 5.

Phase Element Technology Cost Detail Report (without Markups)

Technology: Monitoring

Element: Groundwater

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33020401	Disposable Materials per Sample	17.00	EA	11.71	0.00	0.00	$199.10	☐
33020402	Decontamination Materials per Sample	17.00	EA	10.43	0.00	0.00	$177.35	☐
33021509	Monitor well sampling equipment, rental, water quality testing parameter device rental	1.00	WK	327.94	0.00	0.00	$327.94	☐
33021602	Testing, soil & sediment analysis, pH, electrometric (9045)	12.00	EA	8.00	0.00	0.00	$96.00	☑
33029506	Metals (EPA 6020)	14.00	LS	200.00	0.00	0.00	$2,800.00	☑
33029512	VOCs (EPA 8260B) (1.5)	12.00	LS	157.00	0.00	0.00	$1,884.00	☑
33029524	Anions (Sulfate, Phosphate, Chloride,Nitrate)(EPA 300)	12.00	LS	66.00	0.00	0.00	$792.00	☑
33029526	TDS (160.1)	12.00	LS	15.00	0.00	0.00	$180.00	☑
33231186	Well Development Equipment Rental (weekly)	1.00	WK	607.32	64.20	0.00	$671.51	☐
33231189	DOT steel drums, 55 gal., open, 17C	8.00	EA	115.32	0.00	0.00	$922.56	☐
33232407	PVC bailers, disposable polyethylene, 1.50" OD x 36"	8.00	EA	8.45	0.00	0.00	$67.60	☐

Phase Element Technology Cost Detail Report (without Markups)

				Total Element Cost			**$8,118.06**	

Element: General Monitoring

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33010104	Sample collection, vehicle mileage charge, car or van	500.00	MI	0.23	0.00	0.00	$112.50	☐
33010202	Sample collection, sampling personnel travel, per diem	4.00	DAY	86.00	0.00	0.00	$344.00	☑
33220108	Project Scientist	77.00	HR	0.00	70.25	0.00	$5,409.56	☐
33220112	Field Technician	41.00	HR	0.00	38.79	0.00	$1,590.45	☐
33220114	Word Processing/Clerical	9.00	HR	0.00	27.02	0.00	$243.20	☐
33220115	Draftsman/CADD	9.00	HR	0.00	35.33	0.00	$317.94	☐
				Total Element Cost			**$8,017.65**	
				Total 1st Year Technology Cost			**$16,135.72**	

Phase Element Technology Cost Detail Report (without Markups)

Technology: Monitoring

Element: General Monitoring

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33010104	Sample collection, vehicle mileage charge, car or van	500.00	MI	0.23	0.00	0.00	$112.50	☐
33010202	Sample collection, sampling personnel travel, per diem	4.00	DAY	86.00	0.00	0.00	$344.00	☑
33220108	Project Scientist	4.00	HR	0.00	70.25	0.00	$281.02	☐
33220112	Field Technician	41.00	HR	0.00	38.79	0.00	$1,590.45	☐
33220114	Word Processing/Clerical	4.00	HR	0.00	27.02	0.00	$108.09	☐
33220115	Draftsman/CADD	4.00	HR	0.00	35.33	0.00	$141.31	☐
				Total Element Cost			**$2,577.36**	
				Total 1st Year Technology Cost			**$2,577.36**	

Phase Element Technology Cost Detail Report (without Markups)

Technology: Monitoring

Element: Groundwater

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33020401	Disposable Materials per Sample	6.00	EA	11.71	0.00	0.00	$70.27	☐
33020402	Decontamination Materials per Sample	6.00	EA	10.43	0.00	0.00	$62.60	☐
33021617	Pesticides/PCBs (EPA 608), Water Analysis	6.00	EA	241.81	0.00	0.00	$1,450.84	☐
33029533	SVOC's (EPA8270C) (7.3)	6.00	LS	274.00	0.00	0.00	$1,644.00	☑
33232407	PVC bailers, disposable polyethylene, 1.50" OD x 36"	4.00	EA	8.45	0.00	0.00	$33.80	☐
				Total Element Cost			**$3,261.50**	

Element: General Monitoring

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33010104	Sample collection, vehicle mileage charge, car or van	2.00	MI	0.23	0.00	0.00	$0.45	☐
33220112	Field Technician	16.00	HR	0.00	38.79	0.00	$620.66	☐
				Total Element Cost			**$621.11**	
				Total 1st Year Technology Cost			**$3,882.62**	

Cost Database Date: 2005

Cost Type: User-Defined

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Phase Element Technology Cost Detail Report (without Markups)

Total Phase Element Cost	**$22,595.70**